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THE ROOT AND ITS MODIFICATION
IN PRIMITIVE INDO-EUROPEAN

BY
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COLUMBIA UNIVERSITY DISSERTATION

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ABBREVIATIONS: BOOKS AND PERIODICALS

- AJP = American Journal of Philology; Baltimore, 1880 sqq.
 AJSL = American Journal of Semitic Languages and Literatures; Chicago, 1884-1941.
 AOF = Archiv für Orientforschung; Berlin, 1904 sqq.
 AOr = Archiv Orientalní; Prague, 1929 sqq.
 ARIV = Atti del Reale Istituto Veneto di Scienza, Lettere ed Arte; Venice, 1841 sqq.
 BB = Beiträge zur Kunde der indogermanischen Sprachen, ed. A. Bezzenberger; Göttingen, 1877-1906.
 Bender, H. E., A Lithuanian etymological index; Princeton, 1921.
 Benveniste, E., Origines de la formation des noms en indo-européen, 1; Paris, 1935.
 Berneker, E., Slavisches etymologisches Wörterbuch, Fasc. 1-11; Heidelberg, 1908-14 (all published).
 BGr = K. Brugmann and B. Delbrück, Grundriss der vergleichenden Grammatik der indogermanischen Sprachen, 2d ed.; Strasbourg, 1897-1916.
 Bois. = Boisacq, E., Dictionnaire étymologique de la langue grecque, 3d ed.; Heidelberg and Paris, 1938.
 BSL = Bulletin de la Société de Linguistique de Paris; Paris, 1867 sqq.
 Buck, C. D., Comparative grammar of Greek and Latin; Chicago, 1933.
 Couvreur, W., De hettitische *ḫ*: een bijdrage tot de studie van het indo-europeesche vocalisme; Louvain, 1937.
 CP = Classical Philology; Chicago, 1906 sqq.
 CRAI = Comptes Rendus de l'Académie des Inscriptions et Belles-Lettres; Paris 1858 sqq.
 Curme Volume of Linguistic Studies; Baltimore, 1930.
 EI = J. Kurylowicz, Études indoeuropéennes, 1; Cracow, 1935.
 EM = Ernout-Meillet, Dictionnaire étymologique de la langue latine: histoire des mots, 2d ed.; Paris, 1939.
 Étrennes de linguistiques offertes ... à Émile Benveniste; Paris, 1928.
 Feist = S. Feist, Vergleichendes Wörterbuch der gotischen Sprache, 3d ed.; Leiden, 1939.
 Friedrich, J., Kleinasiatische Sprachdenkmäler; Berlin, 1932.
 Grassman, H., Wörterbuch zum Rig-Veda; Leipzig, 1873.
 Gray, L. H., Foundations of Language; New York, 1939.
 HGI = E. H. Sturtevant, A Hittite glossary: words of known or conjectured meaning, with Sumerian and Akkadian words occurring in Hittite texts, 2d ed.; Philadelphia, 1936.
 HGI Supp. = E. H. Sturtevant, Supplement to A Hittite Glossary, 2d ed.; Philadelphia, 1939.
 Hirt-Arntz, Die Hauptprobleme der indogermanischen Sprachwissenschaft; Halle, 1939.

- Hirt Festschrift = Germanen und Indogermanen, Festschrift für Hermann Hirt, 2 vols.; Heidelberg, 1936.
- Hrozný, B., Die Sprache der Hethiter, ihr Bau und ihre Zugehörigkeit zum indogermanischen Sprachstamm, ein Entzifferungsversuch; Leipzig, 1917.
- HT = Hittite texts in the cuneiform character from tablets in the British Museum, London, 1920.
- Hübschmann, H., Armenische Grammatik, 1. Theil: Armenische Etymologie; Leipzig, 1895.
- ICL = International Congress of Linguists.
- ICO = International Congress of Orientalists.
- IF = Indogermanische Forschungen; Strassburg, Berlin, and Leipzig, 1892 sqq.
- IG = H. Hirt, Indogermanische Grammatik, Vol. 1: Etymologie, Konsonantismus; Heidelberg, 1927. Vol. 2: Indogermanischer Vokalismus; Heidelberg, 1921.
- JA = Journal Asiatique; Paris, 1822 sqq.
- JAOS = Journal of the American Oriental Society; New Haven, 1849 sqq.
- JRAS = Journal of the Royal Asiatic Society of Great Britain and Ireland; London, 1834 sqq.
- KBo = Keilschrifttexte aus Boghazköi; Leipzig, 1921-3.
- KIF = Kleinasiatische Forschungen; Weimar, 1927-30.
- KUB = Keilschrifturkunden aus Boghazköi; Berlin, 1922 sqq.
- KZ = Zeitschrift für Vergleichende Sprachforschung auf dem Gebiete der Indogermanischen Sprachen, begründet von A. Kuhn; Berlin, 1852 sqq.
- Lang = Language, Journal of the Linguistic Society of America; Baltimore, 1925 sqq.
- Leumann-Hofmann, Lateinische Grammatik (5th ed. of Stolz-Schmalz, Lateinische Grammatik); Munich, 1924-8.
- LS = Liddell-Scott, Greek-English Lexicon; Oxford, 1925-39.
- Mélanges linguistiques offerts à Holger Pedersen; Copenhagen, 1937.
- MDOG = Mitteilungen der Deutsch-Orient Gesellschaft; Berlin, 1899 sqq.
- Meillet, A., Esquisse d'une grammaire comparée de l'arménien classique, 2d ed.; Vienna, 1936.
- Meillet, A., Introduction à l'étude comparative des langues indo-européennes, 7th ed.; Paris, 1934.
- Miklosich, F., Etymologisches Wörterbuch der slavischen Sprachen; Vienna, 1886.
- Milewski, T., L'Indo-hittite et l'indo-européen; Cracow, 1936.
- Monier-Williams, Sir M., Sanskrit-English Dictionary; Oxford, 1888.
- MS = Pedersen-Götze, Muršilis Sprachlähmung: ein hethitischer Text, mit philologischen und linguistischen Erörterungen; Copenhagen, 1934.
- MSL = Mémoires de la Société de Linguistique de Paris; Paris, 1868 sqq.
- NTS = Norsk Tidsskrift for Sprogvidenskap; Oslo, 1928 sqq.
- OLZ = Orientalistische Literaturzeitung; Leipzig, 1898 sqq.
- Pedersen, H., Le Groupement des dialectes indo-européens; Copenhagen, 1925.

- Pedersen, H., *Hittitisch und die anderen indo-europäischen Sprachen*; Copenhagen, 1938.
- REA = *Revue des Études Anciennes*; Bordeaux, 1899 sqq.
- REI = *Revue des Études Indo-Européennes*; Bucarest, 1938 sqq.
- RHA = *Revue Hittite et Asianique*; Paris, 1930 sqq.
- RO = *Rocznik Orientalistyczny*; Lwow, 1925 sqq.
- Sapir, E., *Language*; New York, 1921.
- Saussure, F. de, *Mémoire sur le système primitif des voyelles dans les langues indo-européennes*; Leipzig, 1879.
- Schwartz, B., *The Hittites: a list of references in The New York Public Library*; New York, 1939.
- SHG = E. H. Sturtevant, *A comparative grammar of the Hittite language*; Philadelphia, 1933.
- Sommerfelt, A., *La Langue et la société*; Oslo, 1938.
- SPAW = *Sitzungsberichte der Preussischen Akademie der Wissenschaften*; Berlin, 1882 sqq.
- SSS = Sieg-Siegling-Schulze, *Tocharische Grammatik*; Göttingen, 1931.
- Stand und Aufgaben der Sprachwissenschaft: *Festschrift für Wilhelm Streitberg*; Heidelberg, 1924.
- Symbolae grammaticae in honorem I. Rozwadowski, 2 vols.; Cracow, 1927-8.
- TAPA = *Transactions of the American Philological Association*; Middletown, Conn., etc., 1871 sqq.
- Uhlenbeck, C. C., *Kurzgefasstes etymologisches Wörterbuch der altindischen Sprache*; Amsterdam, 1899.
- Vendryes, J., *Le langage*; Paris, 1921.
- WH = A. Walde, *Lateinisches etymologisches Wörterbuch: dritte neubearbeitete Auflage von J. B. Hofmann, fasc. 1-12*; Heidelberg, 1935 sqq.
- Whitney, W. D., *The Roots, verb-forms and primary derivatives of the Sanskrit language*; Leipzig, 1885.
- WP = Walde-Pokorny, *Vergleichendes etymologisches Wörterbuch der indogermanischen Sprachen*, 3 vols.; Berlin and Leipzig, 1927-32.
- WZKM = *Wiener Zeitschrift für die Kunde des Morgenlandes*; Vienna, 1887 sqq.
- ZA = *Zeitschrift für Assyriologie und verwandte Gebiete*; Berlin and Leipzig, 1886 sqq.

OTHER ABBREVIATIONS

| | | | |
|-------|-----------|-------|--------------|
| abl. | ablative | Arm. | Armenian |
| act. | active | AS | Anglo-Saxon |
| adj. | adjective | Att. | Attic |
| adv. | adverb | Av. | Avesta |
| Aeol. | Aeolic | Bret. | Breton |
| Alb. | Albanian | BS | Balto-Slavic |
| aor. | aorist | Celt. | Celtic |

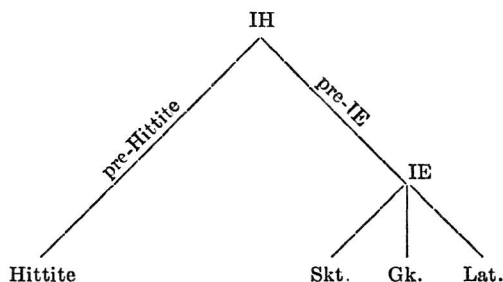
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|-------|--------------------------------------|--------|-------------------------|
| Cyp. | Cyprian | MHG | Middle High German |
| dat. | dative | MIr. | Middle Irish |
| dem. | demonstrative | NE | New English |
| den. | denominative | NHG | New High German |
| dep. | deponent | nom. | nominative |
| der. | derivative | Nor. | Norwegian |
| dim. | diminutive | NP | New Persian |
| Dor. | Doric | OCS | Old Church Slavie |
| du. | dual | OE | Old English |
| ext. | extension | OHG | Old High German |
| fn. | footnote | OIc. | Old Icelandic |
| Fris. | Frisian | OIr. | Old Irish |
| Gaul. | Gaulish | ON | Old Norwegian |
| Geg | Geg Albanian | OP | Old Persian |
| gen. | genitive | OPr. | Old Prussian |
| Gk. | Greek | opt. | optative |
| Gmc. | Germanic | Osc. | Oscan |
| Goth. | Gothic | OSw. | Old Swedish |
| Hit. | Hittite | OW | Old Welsh |
| IE | Indo-European | P | Pre-, Proto-, Primitive |
| IH | Indo-Hittite | Pahl. | Pahlavi |
| I-I | Indo-Iranian | pass. | passive |
| Ill. | Illyrian | pf. | perfect |
| inst. | instrumental | PGmc. | Proto-Germanic |
| ind. | indicative | Phryg. | Phrygian |
| inf. | infinitive | PIE | Proto-Indo-European |
| ipf. | imperfect | PIH | Proto-Indo-Hittite |
| ipv. | imperative | pl. | plural |
| Ir. | Irish | pro. | pronoun |
| Ital. | Italic | prs. | present |
| Lac. | Laconian | ptc. | participle |
| Lat. | Latin | rel. | relative |
| Lett. | Lettish | sb. | substantive |
| lex. | recorded only by lexi- cographers | sbj. | subjunctive |
| Lith. | Lithuanian | sg. | singular |
| loc. | locative | Skt. | Sanskrit |
| Luw. | Luwian | supp. | supplement |
| med. | medio-passive | Thrac. | Thracian |
| Mess. | Messapic | Toch. | Tocharian |
| mg. | meaning | Umb. | Umbrian |
| | | Ven. | Venetic |
| | | w. | with |

- * hypothetical reconstruction
 :: in relation with, beside
 / varies between
 > becomes, develops into
 < comes from, derived from

INTRODUCTION

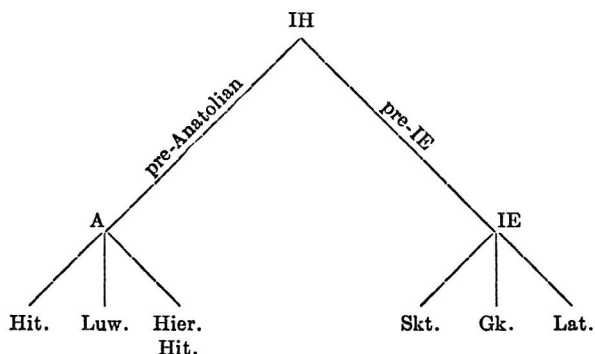
The Indo-Hittite hypothesis has its origin in the suggestion by Emil Forrer¹ that Hittite separated from the parent stock earlier than the language conventionally termed Indo-European which, since Schleicher's day, has been partially reconstructed by the comparative method. Forrer never amplified his suggestion, but E. H. Sturtevant undertook to prove the point. Consequently, in a series of articles,² Sturtevant adduced a number of phenomena (phonological, morphological, and lexicographical³) in Hittite, establishing conclusively that this language represented an older stratum than the other Indo-European languages. But at this point Sturtevant postulated an hypothesis wherein it is held that Hittite and Indo-European both separated from a common ancestor which he calls Indo-Hittite; thus, Hittite would bear about the same relationship to Sanskrit, as, e.g., Hamitic to Arabic in the Hamito-Semitic group, with the following stemma:⁴

TABLE 1



Since, however, the solitary position of Hittite and the disproportionately long periods of pre-Hittite and pre-Indo-European militate against such a scheme, the stemma was subsequently modified as follows:⁵

TABLE 2



¹ MDOG 61.26 (1921).

² For this list of articles cf. Lang. 15.11, fn. 2 (1939).

While it has proved most convenient, for practical considerations, to operate with such a stemma, scientific method requires a stricter delimitation of the role of Hittite in the light of the available evidence. Hence, besides the specific exceptions taken by Holger Pedersen,⁶ the following more general objections to Sturtevant's proposed stemma need to be considered: (1) The symmetrical bi-furcation of theoretical pre-Indo-Hittite into an alleged pre-Anatolian and pre-Indo-European tends to dissipate the positive gain made in identifying Hittite as an earlier offshoot from the parent stock. If the fact that Hittite deviates from the other Indo-European languages (by archaisms or innovations) is to be taken as a criterion for setting up a bifurcal stemma from a theoretical pre-Indo-Hittite, then we are equally justified in similar branchings-off from the parent prototype wherever any linguistic area whatsoever exhibits comparable phenomena (of archaisms or innovations), such as, e.g., the Germanic sound-shifts, or the Armenian affricates. (2) The more distant relationship of Hittite to the other Indo-European languages under such a scheme is quite difficult to explain in the light of the admittedly numerous linguistic correspondences between the alleged areas. No such preponderance of linguistic correspondences exists between, e.g., hieroglyphic Egyptian and/or any of its later phases, and Arabic. (3) Finally, and more specifically, there is as yet no evidence whatsoever for the variegation of a pre-Anatolic language into a group of related languages. The interpretation neither of Luwian nor of 'hieroglyphic Hittite' has reached the stage where sure comparative linguistic phenomena can be adduced. So far as the meagre remains permit of judgment, Luwian continues an older stratification of Hittite,⁷ while the hieroglyphic language, whose documents come chiefly from a period some four or five hundred years after the collapse of the Hittite Empire, may well be a younger phase of Hittite. The surface appearance of other such Asianic languages as Lycian, Lydian,⁸ etc., and,

⁶ Cf. e.g. SHG 30-2.

⁷ SHG 30.

⁸ Paper read by Sturtevant at the annual meeting of the Linguistic Society of America at Philadelphia, 1939.

⁹ Hittitisch und die anderen indoeuropäischen Sprachen (Kongelige Danske Videnskabsnernes Selskab, Hist.-filo. Meddelelser, Bind 25, Copenhagen 1938). Cf. also Sturtevant's review in LANG. 14.290-2 (1938).

⁷ Cf. e.g. Luw. *hišhiyanzi* :: Hit. *išhiyanzi*, with Luwian retention of an initial laryngeal already lost before the Hittite period. Luwian does not generalise the palatalisation of dentals before front vowels, although a tendency in that direction is already observable (cf. the relative pronoun, pl. *kwinzi* :: Hit. *kves*).

⁸ The Indo-European character of Lycian has most recently been argued by Piero Meriggi, 'Der Indogermanismus des Lykischen', Hirt Festschrift ii, 257-82. For the earlier literature and the texts, cf. Johannes Friedrich, *Kleinasiatische Sprachdenkmäler* 52 sqq. For Lydian cf. P. Meriggi, 'Der indogermanische Charakter des Lydischen', Hirt Festschrift ii, 285-90. For the earlier literature and the texts, cf. Friedrich, op. cit. 103 sqq. For the problems of hieroglyphic Hittite see P. Meriggi, 'Sur le déchiffrement et la langue des hiéroglyphes hittites', RHA 2.1-57 (1932); B. Hrozný, *Les Inscriptions hittites hiéroglyphiques, essai de déchiffrement, suivi d'une grammaire hittite hiéroglyphique en paradigmes et d'une liste des hiéroglyphes* (Prague, 1937 sqq); I. J. Gelb, *Hittite Hieroglyphs*, i sqq. Chicago, 1931 sqq.; Gelb and G. Bonfante, 'The position of "Hieroglyphic Hittite" among the Indo-European languages,' JAOS 64.169-90 (1944), and the criticisms of A. Goetze and W. M. Austin, *ibid.* 65.51-3, 63-4 (1945).

especially, the uncertain state of their interpretation make it unwise to include such languages within an Anatolian group. The only admissible evidence, therefore, still leaves Hittite in the solitary position which it has in Table 1.

In view of the foregoing, it seems safer, at least for the present, to leave Hittite within the framework of general Indo-European; it is unquestionably an older offshoot from the parent stock, but a *centum*-language⁹ (so far as this isoglot remains valid) about on a par with other *centum*-languages of the Indo-European family. For convenience of citation, however, the term Indo-Hittite (IH) will continue to be used here to denote the period in the development of the parent language before the departure of Hittite.

Within the past decade the literature¹⁰ on the laryngeal hypothesis has reached such proportions that any estimate, even of conflicting views, indicates that the group of sounds postulated under this hypothesis will constitute a permanent factor in future investigations of Indo-European comparative linguistics. Continental scholars, on the whole, follow the three-laryngeal scheme of Kurylowicz (who subsequently added a fourth to meet the requirement of Hittite initial *a-* = IE initial *a-*), Cuny, Benveniste, and Couvreur; Holger Pedersen, alone among the laryngealists, follows de Saussure in operating with only two laryngeals, but with a somewhat different distribution; American scholars, on the other hand, generally operate with the four-laryngeal scheme proposed by Sapir and Sturtevant, all with the following systems of notation:¹¹

| | Sturt.- Sapir | Cuny- Kurył. | Couvreur | DeSaussure | Pedersen |
|----|------------------|-------------------|------------|------------|-----------------------|
| 1. | ' | ʔ ₁ | ' | | |
| 2. | ˙ | (ʔ ₂) | } <i>h</i> | } <i>A</i> | |
| 3. | <i>x</i> | ʔ ₂ | | | <i>H</i> ₂ |
| 4. | <i>γ</i> | ʔ ₃ | ' | <i>Q</i> | <i>H</i> ₁ |

In the present study a modified form of the Sturtevant-Sapir four-laryngeal scheme is followed and, consequently, the same system of notation, save that the fourth laryngeal is transcribed *γ*.

Insofar as it is possible, or desirable, to formulate any phonetic analysis whatsoever of the laryngeals, the following modification of Kerns-Schwartz, i.e., is all that the evidence here to be presented permits us to say:

1. ' , a voiceless palatal (spirant?);¹²

⁹ Thus both palatal and velar *k* appear in Hittite as *k*, and the labiovelar series develops precisely as in the other languages of the *centum*-group, cf. SHG 111-16.

¹⁰ Cf. especially J. Kurylowicz, *Études indo-européennes*, i; É. Benveniste, *Origines de la formation des noms en indo-européen*; H. Pedersen, *op. cit.*; W. Couvreur, *De hettitische b*; E. H. Sturtevant in *Lang.* 16.81-97, 179-82, 273-84 (1940); J. A. Kerns and B. Schwartz in *JAOS* 60.18-92 (1940). For the earlier literature see especially F. de Saussure, *Mémoire sur le système primitif des voyelles dans les langues indo-européennes*; H. Möller, *Die semitisch-vorindogermanischen laryngalen Konsonanten*, and his *Vergleichendes indogermanisch-semitisches Wörterbuch*.

¹¹ Repeated, with slight modification, from Kerns-Schwartz, *op. cit.* 182. Möller's system is difficult to fit into current concepts of the laryngeal hypothesis.

¹² According to Sturtevant-Sapir (cf. e.g., *Lang.* 17.1 [1941]), 'a glottal stop of palatal color.'

2. *ʔ*, a voiced velar (spirant?);¹³
3. *x*, a voiceless velar spirant;
4. *y*, a voiced palatal spirant.¹⁴

The consonantal effects of these sounds is an important by-product of this investigation.

The present study elaborates and extends the principles set forth in several papers under the joint authorship of J. Alexander Kerns and the writer. The criticisms of these views, chiefly by E. H. Sturtevant of Yale University, at the time of their oral presentation¹⁵ (and by correspondence) has helped to clarify them in the writer's mind. Prof. Louis H. Gray has also made some suggestions in the course of my work with him. The responsibility for the whole work, however, is my own.

* * * * *

The foregoing was written in 1940-1. Since that time the appearance of Sturtevant's work, *The Indo-Hittite Laryngeals*, and the author's joint article with J. A. Kerns in *LANG.* 22.57-67 (1946) have proven the validity of Sturtevant's Indo-Hittite hypothesis. PIE should therefore be read PIH throughout the ensuing study.

¹³ Cf. especially §§24-5, Ch. II below. Sturtevant-Sapir, 'a glottal stop of velar color.'

¹⁴ Sturtevant-Sapir, 'a voiced velar spirant.'

¹⁵ Annual meeting of the American Oriental Society, New York, 1940; summer meeting of the Linguistic Society of America, Ann Arbor, 1940; annual meeting of the American Oriental Society, Chicago, 1941.

ROOT-FINAL CONSONANT-ALTERNATION; SUFFIXATION

1. Alternations of occlusive consonants in medial (so-called root-final) position have long been descriptively noted. Apart from cases involving external or internal sandhi changes, assimilation, dissimilation, or 'transfer of aspiration', these alternations of 'order' within the same 'class' (placement-category) are now traditionally described as follows:

a. Simple voiceless :: simple voiced (cf. BGr i, §701, and Hirt, IG i, §345); e.g., Lat. *mentīri* 'tell a lie' :: Lat. *mendax* 'lying'.

b. Simple voiceless :: voiceless aspirate (cf. BGr i, §703, and Hirt, IG i, §347); e.g., Skt. *śēpa-* 'penis, tail' :: Skt. *śēpha-* id.

c. Simple voiceless :: voiced aspirate (denied in GBr i, §705, note, but cf. Hirt, IG i, §346); e.g., Gk. *δέχομαι* 'receive' :: *δέχομαι* id., Skt. *dagh-* 'attain'.

d. Simple voiced :: voiced aspirate (cf. BGr i, §704, and Hirt, IG i, §348); e.g., Skt. *āmbu-* 'water' :: Skt. *āmbha-* id.

e. Voiceless aspirate :: voiced aspirate (cf. BGr i, §702, and Hirt, IG i, §349); e.g., Skt. *nābhi-* 'navel' :: Avest. *nāfa-* id.

2. Most of these alternations may be accepted without straining current notions of etymological structure. Naturally, neither Brugmann nor Hirt explained such of these alternations as they admit in terms of the laryngeal hypothesis,¹ although the possibilities of such an interpretation are now fairly obvious, and have been realized, at least in part. Laryngealists now generally agree that the voiceless aspirates (e.g., *th*) are of secondary origin and arise regularly from the earlier sequence of a simple voiceless stop plus a voiceless laryngeal² (e.g., *tH*), and that in some cases simple voiced stops have developed from an earlier sequence of a simple voiceless stop plus a voiced laryngeal³ (e.g., *tZ*). These principles account adequately for all alternations of type *b* (*t* :: *th*) and for many⁴ of type *a* (*t* :: *d*). With these two generally accepted principles as controls, it becomes legitimate to operate with them in attempting to ascertain the consonantal effects of laryngeals when occupying second position in IH clusters of the type indicated, i.e., in the so-called root-final position.

3. Without regard for the moot problem of 'root-determinatives', or, indeed, for semantics in general (except insofar as particular etymologies are concerned), and without immediate regard for the palatal or velar character of the phonemes (occlusive or laryngeal) involved, the etymologies now to be adduced indicate that the hitherto assembled consonantal alternations in medial position (and for the moment we confine ourselves entirely to medial, or root-final position) need to be redistributed into two groups, or 'triplets', of the types (I) *t* :: *d* :: *th*, and (II) *d* :: *t* :: *dh*.

¹ The laryngeals were not generally recognized until long after Brugmann's day, and Hirt seems never to have taken any account of them.

² See most recently, E. H. Sturtevant, *Lang.* 17, 11. *H* stands for any voiceless laryngeal, *Z* for any voiced laryngeal, *t* for any voiceless stop, and *d* for any voiced stop.

³ Cf., e.g., Kurylowicz, *EI*, 54.

⁴ Not all! Cf. §8.2, and §9.

4. Type I: *t :: d :: th*

1. a. Skt. *ayká-* 'hook, bend', Lat. *ancus* id., Gk. *ἀγκών* 'elbow', *αγκάλη* 'bent arm', with *-k*-root-final, < IH *ank-*.⁵

b. Skt. *āyga-* 'limb', *āyūri-* 'finger, toe', Avest. *angušta-* 'toe', OE *ancleow*, NE *ankle*, with *-g*-root-final, < IH *ang-*.⁶

c. Skt. *nakhā-* 'claw, talon, nail', NP *naxun* id., Gk. gen. sg. *δνυχος* id., OE *nægel* id., with *-kh*-root-final, < IH (o)n(o)kh-.⁷

2. a. Skt. *vāñcati* 'totter, go crookedly', Lat. *vacillāre* id., Goth. *un-wāhs* 'blameless (not going crookedly)', OE *wóh* 'crooked', with *-k*-root-final, < IH *ṽank-*.⁸

b. Skt. *vaṅgati* 'go, go lamely' (lex.), Lat. *vagus* 'wandering, errant', NHG *wanken*, with *-g*-root-final, < IH *ṽang-*.⁹

c. Skt. *va(ṅ)khati* 'move, move about' (lex.), with *-kh*-root-final, < IH *ṽankh-*.

3. a. Skt. *pātati* 'move swiftly, fly, fall', Gk. *πέτομαι* 'move swiftly, fly', *πίπτω* 'fall', with *-t*-root-final, < IH *pet-*.¹⁰

b. Skt. *padá-* 'foot', Lat. gen. sg. *pedis*, Arm. *otn* id., with *-d*-root-final, < IH *ped-*.¹¹

c. Skt. *pānthan-* 'path, road', Avest. *paθan-* id., with *-th-* root-final, < IH *peth-*.¹²

4. a. Lat. *rota* 'wheel', Lith. *rātas* 'wheel, circle', OIr. *rethid* 'runs', OHG *rad* 'wheel', with *-t*-root-final, < IH *ret-*.¹³

b. Lat. *radius*¹⁴ 'spoke', with *-d*-root-final, < IH *red-*.

c. Skt. *rātha-* 'chariot', Avest. *raθa-* id., with *-th*-root-final, < IH *reth-*.¹⁵

5. a. Gk. *λάπτω* 'lick', Alb. *l'ap* 'lick, sip', with *-p*-root-final, < IH *lap-*.¹⁶

b. Lat. *lambō* 'lick, lap', OE *lapiān* 'drink, lap', and cf. the 'lip' words cognate with Lat. *labium*, with *-b*-root-final, < IH *lab-*.

c. Arm. *lap'em* 'lick', Gk. *λαφύσσω* 'gulp, swallow greedily', with *-ph*-root-final, < IH *laph-*.

5. Triplets of the type (I), *t :: d :: th*, receive a ready explanation, by the

⁵ WP i, 60, s.v. *2.ank-*. It will be noted here, and throughout this chapter, that IH roots are cited without regard for their probable initial laryngeals. Such initials (in cases of roots with apparent IE initial vocalism) will be treated in the succeeding chapters.

⁶ WP i, 61, cited as an alternant for *2.ank-*.

⁷ For the relation of this group of words to a *-kh*-root-final, cf. Sturtevant, Lang. 17.4 (1941); the material is assembled in WP i, 180, s.v. *onogh-*.

⁸ WP i, 218, s.v. *ṽa-n-q-*.

⁹ WP i, 218, s.v., *ṽa-n-g-*.

¹⁰ WP ii, 19.

¹¹ Cf. WP ii, 23.

¹² WP ii, 26, s.v. *pent-*.

¹³ Material assembled in WP ii, 368, s.v. *reth-*.

¹⁴ Sturtevant, l.c., makes this word contain a representation of Iranian *-th-*. His thesis that IE *-th-* is represented by Latin *-d-* intervocalically is both attractive and very possible, and is probably to be extended to Germanic. Nevertheless, unless we are compelled to resort to the equation Iranian *-th-* = Latin *-d-*, it seems safer to refer words of this type to a sequence with root-final *-d-*.

¹⁵ Bois. 561, s.v. *λαφύσσω*; for the assembled material cf. also WP ii, 383, s.v. *lāb-*, *labh-*(?), *lap(h)-*. In view of the principle evolved here, it is now clear that the Slavic words must come from a root-final *-b-*.

application of principles current among laryngealists,¹⁶ only if we assume that the IH 'root' ended in a voiceless stop. Thus, root-final *-t-* alternates with *-d-* and *-th-* according to the presence or absence of an immediately following voiced or voiceless laryngeal suffix; e.g., IH *-t-* is continued in IE *-t-*; IH *-tZ-* > IE *-d-*; IH *-tH-* > IE *-th-*.

6. Type II. *d :: t :: dh*

1. a. Skt. *ámbu* 'water', Gk. *δμβρος* 'rain', Lat. *ímber* id., with *-b-root-final*, < IH (e)*mb-*.¹⁷

b. Skt. gen. sg. *apás* 'water', Lith. *úpe* id., with *-p-root-final*, < IH (e)*mp-*.¹⁸

c. Skt. *nábha-* 'cloud', Gk. *νέφος* id., Skt. *abhrá-* 'mist', and probably here Hit. *nepis* 'sky', with *-bh-root-final*, < IH (e)*n(e)bh-*.¹⁹

2. a. Gk. *στρεβλός* 'twisted, crooked', with *-b-root-final*, < IH (s)*treb-*.²⁰

b. Gk. *τρέπω* 'turn', Lat. *trepit* id., with *-p-root-final*, < IH (s)*trep-*.²¹

c. Gk. *στρέφω* 'turn', with *-bh root-final*, < IH (s)*trebh-*.²²

3. a. Gk. *λείβω* 'pour', Lat. *libāre* id., with *-b-root-final*, < IH *leib-*.²³

b. Hit. *lip(p)-* 'spread, smear', Skt. *limpāti* id., Lith. *limpù* 'cling, stick', Skt. *lepa-* 'unguent', Gk. *λιπαρός* 'fat, oily, unctuous', with *-p-root-final*, < IH *leip-*.²⁴

c. Gk. *ἀλείφω* 'anoint', Lat. *cae-lebs* 'living alone', OS *libbian*, OE *libban*,²⁵ NE *live*, with *-bh-root-final*, < IH *leibh-*.²⁶

4. a. Lat. *ob* 'over against', etc., with *-b-root-final*, < IH *eb-*.²⁷

b. Skt. *ápi* 'to, into, towards' etc., Avest. *a'pi* 'to, over to, at', Gk. *ἐπι* 'to', Lat. *op-* in *operiō* < **op-veriō*, *oportet* < **op-vortet*²⁸ 'turns to, comes to', with *-p-root-final*, < IH *ep-*.²⁹

c. Skt. *abhí* 'to, towards', Goth. *bi* 'to, towards', with *-bh-root-final*, < IH *ebh-*.³⁰

¹⁶ Cf. §2 above, and fnn. 2 and 3.

¹⁷ WP i, 131 bot., s.v. *emb(h)-*.

¹⁸ Cf. WP i, 46, s.v. 2. *āp-*. Note the *-b*-alternations, which belong to group 1, d here. The West European *a*-vocalism is the reduced grade. Lith. *ù-* represents IE *a* or *o*.

¹⁹ WP i, 131.

²⁰ Hirt. IG i, §348.

²¹ WP i, 756, s.v. 2. *trep-*.

²² So Bois. 919. In the absence of non-Greek cognates, however, it must be admitted that the root-final might just as well have been *-ph-*. In any event, the relationship between the members of this triplet is certain.

²³ WP ii, 393.

²⁴ WP ii, 403.

²⁵ The Germanic words take on an especial significance in view of Smith's analysis of the phenomenon of *Verschärfung*, LANG. 17.93 ff. (1941). It will be noted that our words fit perfectly into that analysis, as an instance of a stop plus a laryngeal.

²⁶ WP ii, 403, s.v. *leibh-*; Bois. 42; Hirt IG i, §348; WH i, 811.

²⁷ That the *b* of Lat. *ob* is original and cannot represent IE *bh* is confirmed by the absence of **of* in P-Italic, and by the presence of Osc. *úp*, *op*, cf. WP i, 122, bot.

²⁸ Lat. *opācus* < **op-* plus formant *-āko-* is decisive for the voiceless nature of the stop here.

²⁹ WP i, 122, s.v. *epi*, *opi*, *pi*.

³⁰ WP i, 124, s.v. (*ebhi?*) *obhi*, *bhi*.

5. a. Lat. *digitus* 'finger', Goth. *taikn* 'sign, token', Gk. *δείγμα* 'proof, example', with *-g*-root-final, < IH *deig*-.³¹

b. Gk. *δείκνυμι* 'show', Skt. *diśāti* 'indicate', Lat. *dīcō* 'say', etc., Goth. *ga-teihan* 'announce', with *-k*-root-final, < IH *deik*-.³²

c. Arm. *tizanem* 'tickle, prickle', Nor. dial. *tikka* 'touch lightly', OE *tinclian*, NE *tickle*, with *-gh*-root-final, < IH *deigh*-.³³

6. a. Gk. *ἐγώ*, Lat. *ego*, Goth. *ik*, with *-g*-root-final, < IH *eg*-.³⁴

b. Arm. *es*,³⁵ Lith. *aš* 'I', and cf. the dittography³⁶ in the Hittite first personal pronoun *ukk-*, with *-k*-root-final, < IH *ek*-.³⁷

c. Skt. *ahám*, Avest. *azəm* 'I' with *-gh* root-final, < IH *egh*-.³⁴

7. a. Gk. *μέγας* 'great', Goth. *mikils*, Lat. *mag-nus*, Arm. *mec*³⁷ id., with *-g*-root-final, < IH *meg*-.³⁸

b. Hit. *mekkis*³⁹ 'great', with *-k*-root-final, < IH *mek*-.³⁹

c. Skt. *mah-*, *mahānt-* 'great', Avest. *maz-*, *mazant-* id., with *-gh*-root-final, < IH *megh*-.³⁸

8. a. OIc. *bauta* 'beat, push', OE *béatan* id., OIr *bibdu* 'enemy', with *-d*-root-final, < IH *bha(y)d*-.⁴⁰

b. Lat. *-fūtō* in *confūtō* 'beat down' etc., *refūtō* 'beat back', and prob. also *futuō* 'push' (?), Alb. *mbyt* 'throttle'; connected with these are forms without the radical *-u-* in Lat. *fatuus* 'silly (smitten with dumbness?)', Lat. *battuō* (Gaulish loan-word) 'beat', Welsh *battho* id., Russ. *batz* 'cudgel', with *-t*-root-final, < IH *bha(y)t*-.⁴¹

c. Skt. *bādhate* 'press' oppress', OIr. *bodb* 'war-goddess in the form of a crow', OHG *batu-* 'battle', OE *beadu* id., with *-dh* root-final, < IH *bhadh*-.⁴²

9. a. Lat. *foedus*⁴³ 'foul, disgusting, hateful', with *-d*-root-final, < IH *bhoid*-.⁴³

b. Lat. *foeteō* 'stink', *foetidus* 'stinking', with *-t*-root-final, < IH *bhoit*-.⁴⁴

³¹ Cf. WP i, 777, top.

³² WP i, 776.

³³ WP i, 777, where besides the words meaning 'tickle, prickle', several words for pricking, stinging insects are cited, cf. esp. MÍr. *dega*, NE *tick*.

³⁴ WP i, 115, s.v. *eg(h)om*.

³⁵ It is, therefore, no longer necessary to explain Arm. *es* by appeal to some obscure analogy (cf. Meillet, *Esquisse*², 37, 57, 163), especially in view of the Baltic and Hittite correspondents.

³⁶ Cf. SHG §66. Double writing of the stop corresponds to an IE voiceless stop, single writing to an IE voiced stop.

³⁷ It will be noted that no appeal to analogy is necessary here.

³⁸ WP ii, 257, s.v. *meg(h)*-.³⁸

³⁹ Thus clarifying the double writing of the stop in this word (cf. SHG §63a), otherwise inexplicable.

⁴⁰ WP ii, 127.

⁴¹ WP ii, 125.

⁴² Cf. WP ii, 126, bot., where, however, Skt. *bhād-* is denied a place within this root. The length of the vowel in the Sanskrit root is due to the reduplication of the initial syllable of the root, cf. §§30, 31, below.

⁴³ WH i, 522 makes this an extension of **bhōi-* etc., 'fear', while WP i, 877 makes it an extension of *dheu-* 'blow', etc. The relation of all three members of this triplet to the root **ede* 'stink; hate' (cf. iv, 24 below) seems certain.

⁴⁴ Cf., however, WH i, 499, who connects this word with Lat. *finus* 'excrement' and **dheu-* (WP i.c.).

c. Skt. *badh-* 'abhor, detest' in desid. *bībhatsate*, Gk. *πιθῆκος* 'ape' (Dor. *-ἄκος*) with *-dh*-root-final, < IH *bha(i)dh-*.⁴⁵

10. a. Gk. *ἄρδus* 'point, point of an arrow', OIr. *aird* 'point', with *-d*-root-final, < IH *ard-*.⁴⁶

b. Skt. *artī-* (lex.) 'end of a bow', with *-t*-root-final, < IH *art-*.

c. Arm. *ardn* 'lance, spear', Lith. *aĩdai* 'frame of stakes for drying flax', with *-dh*-root-final, < IH *ardh-*.⁴⁷

7. Triplets of Type II must have had an original voiced stop root-final, for if the stop were voiceless, the alternative presence or absence of laryngeal suffixes could produce only the consonantal alternations of Type I,⁴⁸ and if the stop were aspirated, some laryngeals, at least, would have had to be endowed with deaspirating properties. Given, then, that the root-final is *-d-*, the alternative presence or absence of a voiceless laryngeal (*H*) or a voiced laryngeal (*Z*) is required in order to yield the alternation of *-d-* :: *-dh-*. Both these possibilities must be examined, i.e., IH *dH* > IE *dh* and IH *dZ* > IE *dh*. Supposing, then, that IH *dH* > IE *dh*, IH *dZ* would be required to yield IE *t*, in other words, a voiced laryngeal, which admittedly voices an immediately preceding voiceless stop (IH *tZ* > IE *d*), would at the same time have the power to unvoice an immediately preceding voiced stop! This is manifestly impossible, and we are left with the only other alternative, viz., IH *dZ* > IE *dh*, while IH *dH* > IE *t*, thus obeying the primary sandi law of normal regressive assimilation.

8. The consonantal effects of the laryngeals at once become apparent, and may be stated as follows: (1) A voiceless laryngeal unvoices, without aspirating, an immediately preceding voiced stop, but aspirates an immediately preceding voiceless stop.⁴⁹ (2) A voiced laryngeal voices, without aspirating, an immediately preceding voiceless stop, but aspirates an immediately preceding voiced stop. An important corollary to all this is that, at least in medial position, all aspirated stops are of compound origin, i.e., composed of a stop plus a laryngeal.⁵⁰

In sum, then, we may tabulate the scheme as follows:

| | |
|-----------------------------|-----------------------------|
| IH <i>tH</i> > IE <i>th</i> | IH <i>dH</i> > IE <i>t</i> |
| IH <i>tZ</i> > IE <i>d</i> | IH <i>dZ</i> > IE <i>dh</i> |

9. Not all 'roots', to be sure, exhibit all three members of a 'triplet'. Accordingly, when alternations of the type *-t-* :: *-d-* (or *-d-* :: *-t-*) occur, it is impossible to determine whether the original root-final was *-t-* or *-d-*. Any alternation involving an aspirated stop, however, reveals that the root-final was originally the unaspirated stop of the same order; i.e., an alternation *-t-* :: *-th-*

⁴⁵ WH i, 522, s.v. *foedus*, where connexion with **πιθος* 'hateful' is actually suggested.

⁴⁶ WP i, 83.

⁴⁷ WP i, 84.

⁴⁸ I.e., IH *-tH-* > IE *-th-*, IH *-tZ-* > IE *-d-*, cf. §2, above.

⁴⁹ Cf. Kerns-Schwartz, JAOS 60, 60.

⁵⁰ Already partially conceded by Sturtevant, Lang 17.11 (1941).

or of *-d-* :: *-th-* must have had an original root-final *-t-*, while an alternation of *-t-* :: *-dh-* or of *-d-* :: *-dh-* must have had an original root-final *-d-*.⁵¹

10. The alleged alternation of *-th-* :: *-dh-*, specifically denied by Brugmann,⁵² is not consonant with any interpretation of the laryngeal hypothesis whatsoever, and is here denied. Such apparent examples as Skt. *áltha* 'then, so' :: Skt. *ádha* 'then, so' could have evolved from different roots. The only clear case of apparent relationship Skt. *nábhi-* 'navel' :: Avest. *nāsa-* id., cannot be historical, and must be due to a specifically Iranian contamination.

⁵¹ The original nature of the root-final stop is, of course, also revealed if an IE root occurs only with a root-final aspirated stop.

⁵² Cf. §1e, above.

II

INITIAL CONSONANT-ALTERNATION; PREFIXATION

11. A hitherto unsuspected and entirely different type of alternation exists in a large number of roots traditionally considered Indo-European simplices. This type of alternation consists of different classes of stops (or other consonants, though for the present only the stops need be considered) within the same order; or of initial stops with apparently vocalic initials. Within this category there are two chief types: (I) *p- :: t- :: k-* :: vocalic initial (or any two or three of these); (II) *bh- :: dh- :: gh-* :: vocalic initial (or any two or three of these). Why a similar series of a type *ph- :: th- :: kh-* :: vocalic initial is rare, if not non-existent, will appear presently.¹

12. To accept these types of alternations and to deal with them seriously requires admission of the possibility of structural complexes having some degree of etymological relationship; and, more specifically, it involves recognition of the existence of a very ancient series of prefixes, for the most part long since coalesced with their originally following elements into Indo-European 'simple roots'. Accordingly, wherever a form with an initial stop (or other consonant) alternates with one apparently having a vocalic initial, the latter represents a continuation of the postulated simplex (i.e., non-prefixal form). However, semantic considerations of the individual groups of etymologies here adduced fairly support this structural analysis.

13. *Type I: pe- :: te- :: ke- :: e-*

1. a. Gk. *πένομαι* 'work, toil', *πόνος* 'toil, pain, suffering', *πυνέω* 'accomplish with effort, suffer'. The Greek words are reasonably connected with words for 'pulling, tension, twisting', etc., as Lith. *pinù, pìnti* 'plait', OCS *pъnъ, pětì* 'stretch, strain', OHG, OE *spannan* id., Goth, OHG *spinnen* 'spin', Arm. *henum* 'weave, sew together', Arm. *y-enum* 'lean with the shoulders or hands on', Lat. *sponte* 'by one's own effort, of one's own accord', < IH *pen-*.²

b. Gk. *τείνω* < **tenjō* 'stretch, strain, extend', Skt. *tanōti* 'stretch, strain, extend, last', Lat. *teneō* 'hold', *tenor* 'uninterrupted course' (cf. especially the *d*-extensions in *tendō*), Goth. *-þanjan* 'extend', OHG *denen* id., < IH *ten-*.³

c. Lat. *cōnor*, *-ārī* 'make a bodily effort, attempt, undertake', Gk. *κοινῶν ἐπιγέσθαι, ἐνεργεῖν. κόνει σπεῦδε, τρέχει* (Hesych.), *ἀ-κοινῶν* 'without effort'; perhaps here also the words for 'empty' < 'worked out, stretched out', etc., as Gk. *κενός* 'empty', Arm. *sin* id., < IH *ken-*.⁴

d. Lat. *onus* 'burden, load', Skt. *ānas-* 'cart (for heavy burdens)', Gk. *ἀντα, Aeol. ὀντα* 'sorrow, distress, trouble', Gk. *ἄντος, ἀνιάρπς* 'burdensome, trouble-

¹ Cf. §22 below.

² Cf. Bois. 766, 780; WP ii, 660, s.v. (*s*)*pen-*, and cf. also *pān-* WP ii. 5. Lat. *pānus* is presumably a phonetic reinterpretation of **pannus* < **pъn-nō-*; Theocritean *πᾶνισθεῖν* is possibly a hyper-Dorism; all the forms cited in the etymological dictionaries can be derived from IE *pen-*.

³ WP i, 722, Bois. 947.

⁴ WH 262 (the 'prolonged' grade of the vowel in the Latin word is due to reduplication of the root with an initial laryngeal, cf. §§30, 31 below), WP i, 398; cf. also i, 390.

some', Hit. *an-iya-* 'work, perform', *an-īyan* 'performance, day's work', < IH *en-*.⁵

2. a. Lat. *palūs* 'marsh, swamp', Skt. *palvala-* 'pool', Lith. *pilù, pìlti* 'pour', Arm. *helum* 'pour', *ololem* 'inundate'; cf. also the extensions in Gk. *πλίνω* 'wash', Lat. *pluit* 'rains', etc., < IH *pel-*.⁶

b. Gk. *τέλμα* 'stagnant water, marsh', etc., Lith. *telžiù, telžti* 'urinate', Gk. *σταλάσσω* 'drip, drop, let drip', NE *stale* 'urinate', < IH (*s*)*tel-*.⁷

c. IE **kel-*⁸ must be inferred as a base for such extensions as IE *klep-* (cf. Gk. *κλέπας* νοτερόν πηλῶδες, ἡ δασύ, ἡ ὑγρόν [Hesych.], Lith. *šlampù, šlapti* 'become wet'), IE *kleg-* (cf. Lith. *šlakù, šlàkti* 'drop, drip', *šlèkti, šliknóti* 'sprinkle'), < IH *kel-*.

d. Nor. *ul* 'spoiled, mouldy', Swed. *ul* 'rancid'; cf. also Skt. *āla-* 'discharge of poisonous matter', and the first member of Hit. *alla-pas* 'spittle'. The simplex PIE **ele* is also the first member of the bi-radical compound Hit. *lahw-* 'pour', IE *lou-* 'wash' < PIE **ele-yeye*⁹ 'water-move', or something similar. IE *el-*¹⁰ 'rot, decay' probably evolves from an original meaning 'standing water', or the like.

3. a. Gk. *πέτομαι* 'move swiftly, fly', Skt. *pātati* 'move swiftly, fly, fall', < IH *pet-*, alternating with *ped-*¹¹ 'foot' etc., cf. § 4.3, above.

b. Skt. *śad-* 'fall', Lat. *cadō* id., < IH *ked-*.¹²

c. Skt. *ātati* 'goes, wanders', Lat. *annus* (< **at-nós*) 'year' < IH *et-*.¹³

14. If the principle of prefixation be accepted, it will follow that we are dealing with complexes consisting of prefixes with initial stops of some order plus IH roots with some initial laryngeal. Those who accept IH and PIE original voiceless stops (as *t*), simple voiced stops (as *d*), and voiced aspirated stops (as *dh*), may fairly advance any one of the three as a possibility in any given case as long as the reconstructions do not present inconsistencies. Disregarding, for the moment, the results obtained in the first chapter on the consonantal effects of the laryngeals, let us analyze all the possible solutions in the case of Type I initial alternations above, at first confining ourselves to those cases in which the IE internal root vocalism shows no sign of *a*-coloration, i.e., to cases where the laryngeal involved is the first (').

15. Possible Solutions of Type I:

(1) *t'* > *t*

(2) *d'* > *t*

(3) *dh'* > *t*

Of these solutions (1) is impossible, since *t'* > *th*; and (3) is likewise impossible,

⁵ WP *onos-* i, 132. Simples will be cited without their initial laryngeals until §24.

⁶ WP 6.*pel-* 'flow, pour, wet', ii, 54; and 7.*pel-* 'swamp', ii, 55.

⁷ Cf. Bois. 901, WP ii, 642.

⁸ IE *kel-* postulated by Petersson; cf. WP i, 493, lines 11 sqq.

⁹ With varying accent in the Hittite and IE words, as IH **el³-yeye* > Hit. *lahw-*, IH **el³-yēye* > IE *lou-* 'wash' (cf. WP ii, 441).

¹⁰ Cf. WP 4.*el-* i, 152.

¹¹ WP ii, 18; ii, 19.

¹² WP *kad-* 'fall' i, 339; the reduced vocalism is probably due to IH *ge-'ele-y³* > IE *ked-*.

¹³ WP *at-* 'fall; go' i, 41.

since a laryngeal which aspirates a preceding voiceless stop cannot fairly be expected to deaspirate a preceding aspirated stop. Only (2) is left; and here again, if the principle of prefixation be accepted, the sole conclusion possible is that the voiceless laryngeal ' unvoices, without aspirating, an immediately preceding voiced stop, thus confirming the principle evolved in § 8 above.

16. Even if one does not accept the principle of prefixation, and denies the unvoicing property of the voiceless laryngeal, some cases of initial alternation which do not involve prefixation teach the same lesson. Thus, in the pair Goth. inf. *tēkan* :: Lat. 1 sg. *tangō*¹⁴ the internal root-vowel quantities forbid operating with, e.g., IH *tēZe-* > IE *tē-* :: IH *tZē-* > IE *de-*. Instead, we are forced to operate with IH *dē'e-* > IE *dē-* (> Goth. *tē-kan*, Lat. *dē-nique*, *dō-nec*¹⁵) :: IH *d'e-* > IE *te-* (> Lat. *te-nus*, Lat. *tangō*, etc.). In view of the very different effect of ' upon preceding voiceless and voiced stops respectively, one must realise the impropriety of ascribing blanket 'aspirating' or 'voicing' properties to any laryngeal.¹⁶ What a particular laryngeal does to a preceding stop depends entirely upon the character of that preceding stop.

17. We may draw the corollary that in all cases of initial alternation of Type I (and *e*-vocalism), we are dealing with IH root-initial ' and a syncopated prefix with an initial IH voiced stop; this is not, of course, to say that every IE initial *p(e)-*, *t(e)-*, *k(e)-* has its origin in IH *b'*, *d'*, *g'*; in many cases such IE words continue PIE and IH simplices (of root or of prefix), and hence their initials are original.¹⁷

18. Type II: *bhe-* :: *dhe-* :: *ghe-* :: *e-*

1. a. Skt. *bhāratī* 'bring, carry', Avest. *bara'ti* id., Gk. *φέρω* id., Lat. *ferō* id., Arm. *berem* id., Hit. *pēharzi*¹⁸ 'have with one, carry', < IH *bher-*.¹⁹

b. Skt. *dhārāyati* 'hold, bear, carry, support', *dharmān-* 'holder', *dhārman-* 'hold, support, customary usage', Avest. (3 sg. only with preverb) *-dāraye'ti* 'hold', Lat. *fir-mus* 'steadfast, enduring, strong', Gk. *θεράπων* 'servant, attendant'; Lat. *frētus* 'leaning or supported on something, relying on', Gk. *θρό-vcs* 'seat, chair', Cypr., Lac. *θρο-ναξ*: *ὑποπόδιον* (Hesych.), Gk. *θοη-σκεύω* 'observe religious usages', < IH *dher-*.²⁰

c. Skt. *hāratī* 'take, carry, convey, lead, acquire, obtain', Osc. *heriad* 'capiat', Gk. *χέρω* 'hand', Hit. *kessar*²¹ id., Arm. *jeṛn* id., < IH *gher-*.²²

¹⁴ Cf., e.g., Hirt IG i, §367.

¹⁵ Cf. Kerns-Schwartz, JAOS 60.185, fn. 8 (1940).

¹⁶ Cf. Kuryłowicz, EI 55: 'On aperçoit en même temps la différence entre \mathfrak{z}_2 [= x], qui aspire, et \mathfrak{z}_1 [= y], qui sonorise'. Again, 254, '... \mathfrak{z}_1 aspire les occlusives'.

¹⁷ Cf., e.g., such cases as those suggested in §22 below.

¹⁸ The Hittite word is not exactly equivalent to the IE words, but is probably derived from the IH *p'-yere-*, with accented prefix; cf. §22 below.

¹⁹ WP 1.*bher-* 'carry' ii, 153.

²⁰ WP 2.*dher-* 'hold' i, 856.

²¹ Connected with the Greek words and Toch. A *tsar*, B *šar* in SHG §75 (the Tocharian words, however, possibly come from a guttural with eventual palatalisation). The equation Hit. *kessar* :: Gk. *χέρω* < **χερω* is denied in MS 67 (later granted by Pedersen, Hitt. 41) on the ground that this would result in \bar{e} in the Greek words; cf. Bois. 1054, where dialect-forms indicate pre-Greek **χερ-*. The Hittite word was probably recast on the analogy of the *-sar*-suffix forming action-nouns, itself an analogical creation, cf. SHG §160.

²² WP 4.*gher-* 'grasp, seize' i, 603.

d. Hit. *har(k)*-²³ 'hold', Lat. *rapio* 'seize and carry off, snatch', OLith. *ap-repti* 'take by force', Gk. *ἐρέ-πτομαι* 'feed on (greedily)', < IH *er*-.²⁴

2. a. Goth. *banja* 'blow, bruise, wound', Avest. *banta-* 'sick', OIc., OE *ben* 'wound', < IH *bhen*-.²⁵

b. OSw. inf. *diun-ga* (with guttural extension) 'batter', ME *dingen* 'beat, push', also (if this does not belong to c) Alb. *g-dhënd* 'trim, plane (wood)', Geg. *dhënd* 'hack or hew out', < IH *dhen*-.²⁶

c. Skt. *hānti*, 3 pl. *ghnānti* 'beat, kill', Arm. *ganem* 'beat, cudgel', Hit. *kwen-* 'strike, defeat, kill', Gk. *θεῖνω* 'beat', Lat. *-fen-dō* in *dēfendō* 'beat back', *offendō* 'beat against', < IH *g^hhen*-.²⁷

d. Hit. *ken-kan*²⁸ 'death', IE *en-*, probably in Gk. *ἐνεποι* 'inferi', < IH *en*-.²⁹

3. a. Skt. *bhāla-* 'splendour, lustre', Arm. *bal* 'paleness, whiteness', Gk. *φαλός-λευκός* (Hesych.), OCS *bělъ* 'white', Lith. *bolūoti* 'shimmer whitely', < IH *bhel*-.²⁹

b. OE *deall* 'bright, proud', MIr. *dellrad* 'splendour', Arm. *delin* 'yellow, pale', Lat. *ful-vus* 'reddish brown, tawny', < IH *dhel*-.³⁰

c. Skt. *hāri* 'yellow, golden yellow, fair', Avest. *zaray-* 'yellow, golden, yellowish', OIr. *gel* 'white', Lat. *hel-vus* 'honey-yellow', OHG *gelo* 'yellow', < IH *ghel*-.³¹

d. Skt. *aruṇā-* 'reddish, golden', Avest. *a^uruša-* 'white', OHG *elo* 'bark brown, yellow', Lith. *alvas* (or *ālavas*) 'tin', OPr. *alwis*, OCS *olovo* 'lead', < IH *el*-.³²

19. Here again, if the principle of prefixation be accepted, it will follow that we are concerned with complexes consisting of prefixes with an initial stop of some order plus IH roots with an initial laryngeal. This laryngeal can be only

²³ That the root-final *-k-* is not necessarily part of the root is indicated by the paradigm of this verb, viz., 1 sg. *harmi*, 2 sg. *harsi* (*harti* is also attested in KUB 9.31.2.57 = HT 1.2.29 and KUB 9.31.3.1. = HT 1.2.36), 3 sg. *harzi*, 1 pl. *harweni*, 2 pl. *harteni*, but 3 pl. *harkanzi*. The preterite shows a *-k-* in the 1 sg. and 3 pl., as do the 2 sg. and 3 pl. of the imperative. Beside this, cf. the paradigm of the verb *hark-* 'be destroyed, be lost', with 3 sg. *harakzi*, 2 pl. *harakteni*, 3 pl. *harkanzi*, etc., with *-k-* throughout. MS 50 otherwise, but cf. the sb. *harharān* 'container for liquids' (a holder!). But even if the *-k-* is not an anlogical intrusion within the paradigm, we simply have a suffixed root instead of the simplex, cf. also Lat. *arceō* 'enclose, shut up; hold or keep off', Pedersen, MS 50.

²⁴ The IE words are roots with suffix, e.g., *yerē-pe* > *yrep-*. The rough breathing of Gk. *ἀρπάξω* is thus directly explained without appeal to an alleged initial *s-* (cf. WP ii, 501). The confirmation of W. M. Austin's thesis (LANG. 17.83-92 [1941]) on the alternation in Greek of 'prothesis' with rough breathing, is all the more interesting because the root-initial is a voiced laryngeal; cf. Austin l.c., (fn. 2, and 89, fn. 10), otherwise.

²⁵ WP *bhen-* 'best, wound', ii, 149.

²⁶ WP 3.*dhen-* 'beat, push', i, 853.

²⁷ For the labiovelar here, cf. §27 and table, below. Cf. WP i, 679.

²⁸ The Hittite word is not to be connected with Hit. *henk-* 'fix, assign, devote, fasten (a door)', etc.

²⁹ WP 1.*bhel-* 'shine', ii, 175; 2.*bhel-* 'bloom' ii, 176; 5.*bhel-* 'whitish plant' ii, 189; all of these are very probably ultimately related. The long radical vowels of some of the forms cited are due to reduplication of the initial laryngeal of the root, cf. §31.

³⁰ WP 2.*dhel-* 'light, yellow', i, 865.

³¹ WP *ghel-* 'shine, gleam; yellow, green, grey, or blue' i, 624; *ghel-ou-* 'reed (of yellow colour)' i, 631.

³² WP *elu-* 'yellowish' i, 159.

the fourth (*y*), since the root-internal vocalism of all the forms is *e* or is derived from *e*; and a voiceless laryngeal could produce only the alternations observed in Type I (*pe-* :: *te-* :: *ke-* :: *e-*). Let us again examine the three possible solutions:

20. Possible Solutions of Type II:

- (1) *tye-* > *dhe-*
- (2) *dye-* > *dhe-*
- (3) *dhye-* > *dhe-*.

Of these solutions, (1) is impossible, since *ty* > *d*. There remain (2) and (3). Now, we have already seen, in § 8 (2) above, that a voiced laryngeal aspirates an immediately preceding stop in the case of so-called root-final consonantal alternations.³³ Since the same conditions—i.e., unfavorable placement of the accent with consequent synecopation of the vowel and collision of the stop with the laryngeal—obtain in IE ‘initial’ as well as in medial positions, it is clear that (2) meets all the requirements just observed. For those who adhere to a belief that IE *dh* was original, (3) is not wholly incompatible with (2) in one respect, viz., etymological correspondences between Hittite initial *he-* (or its alternation *ha-*) and IE *bhe-*, *dhe-*, *ghe-*. Here we might offer the theoretical objection that in such a sequence as *dhy-*, alone among any sequence of stop plus laryngeal whatsoever, the laryngeal would not only fail to have any influence upon the immediately preceding stop, but would also disappear everywhere without trace. Aside from other considerations, however, since it has been established (cf. §§ 7–8) that the type *dh-* could never be an original root-final, and since (2) is certainly the source of the voiced aspirates in all cases of medial position and in, at least, some in initial position, there seems to be no good reason for not accepting (2) as the source for the voiced aspirates in every case. In prehistoric phonology one does not postulate more types of origin for a particular sound than a fair interpretation of the available evidence absolutely demands.

21. Just as in the case of *de'e* (cf. § 16), where an accentual variation produces a root internal (initial consonantal) alternation of *dē'e* > *dē* :: *de'ē* > *te*, a root internal laryngeal must also account for the alternation in the pair of so-called presential formatives, IE *d-* and *dh-*, presumably from **dō* and **dhē* respectively. The laryngeal involved cannot be voiceless, since we have seen (cf., e.g., *de'e* above) that the collision of a voiced stop with a following voiceless laryngeal produces a voiceless stop. Since the vocalism of both roots is always *ē* or its alternation *ō*,³⁴ the laryngeal concerned can have been only the fourth (*y*) and both roots come from PIE *deye*. Thus IH *dēye* > Hit. *tā-* ‘take’, IE *dō-*³⁵ ‘give’, while IH *deyé-* (sometimes extended by final root reduplication or by the

³³ Cf. § 7 above.

³⁴ The writer holds that every IE *ō* is the result of qualitative vocalic alternation, cf. Kerns-Schwartz, op. cit., 184, fn. 6.

³⁵ L. H. Gray, ‘The Indo-European Base-Type **do-*, **do-je-*, **do-ye-*, **do-æe-*’ in AJP 62.476–84 (1941), considers this a monosyllabic base with original *ō*-vocalism. The writer considers Gray’s extensions to the admittedly IE monosyllabic root to have been earlier infixes, e.g., *de-je-ye* (cf. § 31 below), while the short forms under the accent, e.g., Skt. *dātra-* ‘gift’, Gk. *δδους* id., come from forms with reduced vocalism and secondary shift of accent.

suffix *-ye-*, or by the suffix *-ie-*) > Hit. *tāi-*, IE *dhē(i)-* 'place, put'. The consonantal effects of the laryngeals (cf. § 8 above) are here again confirmed.

22. In both types of initial correspondences hitherto discussed we have operated with supposed prefixes having a voiced stop as the initial, presumably once followed by a vowel *e* which has been syncopated because unaccented. Probably the fact that the initial stops were voiced is connected with the absence of accent on the prefix, since another series of prefixes, *pe-*, *te-*, *ke-* appears normally to carry the accent.³⁶ Such an accentual situation *pe-y'-*, *te-y'-*, *ke-y'-* > *py'-*, *ty'-*, *ky'-* > *b*, *d*, *g* would be unusual, but would have to exist to account for initial alternations of the type *b- :: d- :: g- ::* vocalic initial, just as *pe-''-*, *te-''-*, etc., would be necessary to yield initial correspondences *ph- :: th- :: kh- ::* vocalic initial. While isolated instances of such accentuation may occur, and are, indeed, attested in such alternations as *t- :: th-*, *d- :: dh-*,³⁷ a whole series of them with a particular root would be necessary to explain the regular correspondences *ph- :: th- :: kh- ::* vocalic initial, or *b- :: d- :: g- ::* vocalic initial. The various etymological dictionaries have been examined with some care without finding any evidence for such regular series of correspondences. The question might be raised: Why, on this hypothesis, are not initial *b-*, *d-*, *g-* as rare as *ph-*, *th-*, *kh-*? The answer is, of course, that IE *b-*, *d-*, *g-* may be original PIE and IH *b*, *d*, *g* as well as end products of *py'-*, *ty'-*, *ky'-*. Presumably most instances of IE *b-*, *d-*, and *g-* are original, the unoriginal cases being as rare as *ph-*, *th-*, and *kh-*.

23. If we now turn to Indo-European words showing root-internal *a*-vocalism, we must, as consistent laryngealists, operate with the *a*-colouring laryngeals: *y* and *x*. If both of these are voiceless, and if both of them aspirate preceding stops, as Sturtevant maintains,³⁸ how are we to account for IE initial sequences of a voiceless stop plus *a*-, e.g., *ta-*? To be sure, such sequences are not too common in our generally accepted restorations, but many unquestioned instances actually occur.³⁹ Nothing can explain this sequence but acceptance of the hypothesis that a voiceless laryngeal unvoices, without aspirating, a preceding voiced stop, e.g., IE *ta-* < earlier *dxe-* (Sturtevant, of course, would add *d'e-*). But if both the *a*-colour laryngeals are voiceless, as Sturtevant maintains, how are we to account for IE sequences of a voiced stop plus *a*-, e.g., *da-*?⁴⁰

³⁶ Just a few exceptions to this principle are all that have come to light in all the forms examined in Chap. IV.

³⁷ Of course, prefixation need not necessarily be involved in this type of alternation; an infixed laryngeal would have produced the same effects under unfavorable accentual conditions without involving the accentual principle observed in the stop-prefixes.

³⁸ Cf. e.g., Lang. 17.1, 11, and fn. 44 (1941).

³⁹ Under Sturtevant's phonetic interpretation, every such sequence as *tx-* would have to yield IE *tha-*, hence every IE *ta-* would necessarily be considered as of secondary origin; cf., however, such roots as those rubricated in WP; *pan-* 'mud, mire, damp' (ii, 5); *panq-* 'swell' (ii, 6); *takē-* 'be silent' (i, 703); 2. *tap-* 'press, press together' (i, 705); *stag-* 'trickle, drip' (ii, 612); 1. *qar-* 'abuse, punish' (i, 353); *qars-* 'scratch, curry' (i, 355); 2. *qal-* 'beautiful; sound, healthy' (i, 356), among many others rubricated, where the cognate forms show no evidence of any vocalism other than *a*-.

⁴⁰ Cf. e.g., WP *bak-* 'staff' (ii, 104); *bal-* 'whirl, turn' (ii, 109); *daḱru-* 'tear' (i, 769); *gabh-* 'goat, lamb' (i, 533); 2. *gal-* 'call, cry' (i, 533), among many others rubricated.

The answer is obvious, for unless we are to deny every such sequence as being unoriginal, we must assume a voiced laryngeal with *a*-colouring quality. Since practically all laryngealists are agreed upon the nature of three of the laryngeals (*ʔ*, *x*, *y* or their correspondents in individual systems of notation), and upon their effect⁴¹ on adjacent vowels, at least, this voiced *a*-colour (i.e., velar) laryngeal can only have been *ʔ*, so that IE *da-* < earlier *te:é*. Further, the quondam existence of this voiced velar is materially confirmed by the exact parallelism between IE roots of the types *dhe-* and *dha-*, where there can be no degree of relationship (i.e., vocalic reduction) between the two types.

24. Type III: *pa-* :: *ta-* :: *ka-* :: *a-*

1. *a.* OE *hagan* 'genitalia', OHG *hegidruosa* 'testicle', NHG *hecken* 'couple (of birds)', NE *hatch*, < IE *kak-*⁴² < IH *kagH-*.

b. Lat. *paveō*⁴³ 'tremble with fear', < IE *paqʷh-* < IH *páǵʷZ-*.

c. Skt. *ágas-* 'transgression, offense, injury, sin', Gk. *áγος* 'pious dread, reverence; curse, pollution, guilt', OE *acan* 'to pain', NFrís. *akelig* 'horridus, miser', NE *ache*, < IE *ag-*⁴⁴ < PIE *xeg-*.

2. *a.* Gk. *τέπος* 'place', *τοπάζω* 'aim at; put in a place', Lith. *tàpti* 'become', Lett. *pa-tapt* 'attain to, reach', < IE *tap-*⁴⁵.

b. OIr *cob* 'victory', OE *gehæp* 'fit, fitting', OIc *happ* 'happiness', NE *happen*, *happy*, < IE *ǵap-*⁴⁶.

c. Skt. *āpnōti*⁴⁷ 'reach, attain', Avest. *apayeiti* id., < IE *ap-*⁴⁸ < PIE *xep-*.

3. *a.* Skt. *kuṣati* 'pull, tug; tear', Gk. *κάννός* 'drawing of lots', OCS *kašiti* 'draw lots', < IE *ǵaus-*⁴⁹.

b. Gk. *ἐξαίω* 'draw, draw or take from', *ἀφύω*, *ἐφύσσω* 'draw, drain', Lat. *hauriō* 'draw, drain, exhaust', OIc *ausa* 'sprinkle, pour', < IE *aus-*⁵⁰.

25. Type IV: *bha-* :: *dha-* :: *gha-* :: *a-*.

1. *a.* Skt. *badh-* in desid. *bībhātsate* 'feel disgust', Lith. *bodėtis* id., Lat. *fastīdium* 'disgust', and, with infix -i-,⁵¹ Lat. *foedus* 'foul, disgusting', Sab. *fēdus* 'haedus', < IE *bha(i)d(h)-*⁵² < IH *b:e(i)d(Z)-* < PIE *be:-ede-*.

b. Lat. *haedus* 'young goat, kid', Goth. *gaitis* 'goat', OE *gāt* id. (i.e., 'the stinking one'), < IE *ghaid-*⁵³ < IH *ǵeid-* < PIE *ge:-ede-*.

⁴¹ Whether or not the laryngeals exercise vocalic effects, or are found in the neighborhood of certain vowels, is largely an academic distinction. For descriptive purposes, at least, a laryngeal (or the traces of one) seen in contact with a palatal vowel is called palatal; if found in the neighbourhood of a velar (or back) vowel, it is termed velar.

⁴² WP i, 334.

⁴³ WP ii, 76 has a root *pou-* 'be alarmed, afraid', but the alleged cognates are semantically unconvincing, and the root is actually questioned *l.c.*

⁴⁴ WP i, 33.

⁴⁵ WP *top-*, i, 743.

⁴⁶ WP i, 457, s.v. *qob-*.

⁴⁷ For the length of the vowel cf. §30 below.

⁴⁸ WP 1.*ap-* 'fit, fasten' i, 46.

⁴⁹ WP *ǵaus-* 'draw lots' i, 332.

⁵⁰ WP i, 27. The *h-* in the Latin word is secondary, cf. WH i, 667.

⁵¹ For the infix, cf. §30 below.

⁵² WP *bhād(h)-* 'feel disgust' ii, 130; *bh(o)idho-* 'foul, disgusting' ii, 186.

⁵³ WP i, 527, with the suggestion that the goat is 'the springing one'; the animal is notorious, however, for its foul odour.

c. Lat. *odor* 'smell', Gk. ὀσϖ 'reek, smell', Arm. *hot* 'odour, scent'; cf. also Arm. *atem* 'hate', Lat. *ōdi* id., < IE *ad*⁵⁴ < PIE **ede-*.

2. a. Skt. *bhājati* 'apportion', Cret. φάγ-ρος 'whetstone', < IE *bhag*⁵⁵ < IH *b:eg-* < PIE *be-:ege-*.

b. Dor. Gk. θάγω 'whet, sharpen', Arm. *daku* 'axe', < IE *dhag*⁵⁶ < IH *d:eg-* < PIE *de-:ege-*.

c. Skt. *āgra-* 'point', Lett. *agrs* 'early', and, with later nasal infix, Lat. *angulus* 'corner, edge', < IE *ag*⁵⁷ < PIE **ege-*.

3. a. Skt. *bhas-* in *bābhasi* 'devour'; with this are very probably to be connected the bird words < IE *bhās*⁵⁸ e.g., Skt. *bhāsa-* 'kind of bird of prey', Gk. θήνη < **bhās-nā* 'kind of eagle or vulture', < IH *b:e(?)s-* < PIE *be-:ese-*.

b. Skt. *ghas-* in *ghasati*, aor. *āghas* 'devour, eat, consume', Lat. *hostia* 'sacificial victim';⁵⁹ with these are to be connected the bird-words < IE *ghans*⁶⁰ (with later infix), e.g., Skt. *hamsā-* 'goose, swan', NE *gander*, < IH *g:es-* < PIE *ge-:ese-*.

c. The postulated simplex IE *as-* < PIE **ese* may occur in Lat. *os-cen*⁶¹ 'name of certain class of birds in augury' (bird-song?!), and, with nasal infix, in Lat. *anser*⁶² 'goose'.

26. The complete structural parallelism of the internal root-vowels *e* and *a* in Types I and II illustrated by the groups of etymologies adduced above, permits a more formal statement of the consonantal effects of the laryngeals:⁶³

IH voiceless stop + voiceless laryngeal > IE voiceless aspirate,

e.g., *t'* > IE *the*, *tx* > IE *tha*;

IH voiceless stop + voiced laryngeal > IE voiced stop,

e.g., *t:* > IE *da*, *ty* > IE *de*;

IH voiced stop + voiceless laryngeal > IE voiceless stop,

e.g., *d'* > IE *te*, *dx* > IE *ta*;

IH voiced stop + voiced laryngeal > IE voiced aspirate,

e.g., *d:* > IE *dha*, *dy* > IE *dhe*.

⁵⁴ WP 1.*od-* 'reek', 2.*od-* 'hate' i, 174, with the suggestion that the roots are probably connected.

⁵⁵ WP 2.*bhag-* 'sharp' ii, 128, and 1.*bhag-* 'apportion' ii, 127.

⁵⁶ WP *dhāg-* 'sharpen' i, 823.

⁵⁷ Cf. WP i, 38. IE *ak-* 'sharp', which also belongs here, represents our simplex with a voiceless laryngeal suffix.

⁵⁸ WP ii, 135 'bird of prey'.

⁵⁹ Cf. WP *ghās-* 'eat, devour' i, 640.

⁶⁰ WP i, 536 *ghans-*, but some of the *satəm*-forms point to the velar; contamination of some sort probably underlies those requiring the palatal. For the literature cf. WH i, 52, s.v. *anser*.

⁶¹ Festus: *oscines, aves auspiciū ore facientes*; there seems to be no reason to reject this explanation in favour of the alternative **obs-cen*, EM 716.

⁶² The initial *h-* is nowhere attested, cf. EM 56 and WH l.c., and while this does not exclude the possibility of Italic **hanser*, it is no longer necessary to postulate this form in order to connect the Latin word with the common Indo-European word for 'goose'. As to the connection with the words for 'feed, devour', etc., the goose is a notoriously gluttonous animal.

⁶³ Cf. Kerns-Schwartz, op. cit., §6 B3.

Hittite, however, everywhere exhibits a simple stop (*t* or *d* indifferently), except insofar as possible medial dittographies indicate voiceless occlusive consonants,⁶⁴ so that we are driven to the conclusion that post-occlusive laryngeals disappeared (except for their vocalic effects) in pre-Hittite times.⁶⁵

27. Observation of sequences arising from both initial and medial (prefixal and suffixal) positions further leads to the belief that the primitive language had but one class of guttural phonemes, *k* and *g*; and that the familiar threefold IE classification into palatals (*k̂, ĝ, k̂h, ĝh*), velars (*q, q̂, qh, q̂h*), and labiovelars (*qʷ, q̂ʷ, qʷh, q̂ʷh*) rests on a specifically Indo-Hittite variegation in which the laryngeals largely figured. The gutturals *k* and *g* immediately followed in Indo-Hittite by a palatal laryngeal normally became IH and IE palatals, e.g., *gʷ > k̂*, etc.; *k* and *g* not immediately followed in Indo-Hittite by a palatal laryngeal normally became IH and IE velars, e.g., *ké > IH* and *IE qe, gé > IH* and *IE qe*; IH and IE velars also arose when undifferentiated PIE *k* and *g* were immediately followed by velar laryngeals, e.g., *gexé > qxe* (in the event of early total reduction)⁶⁶ *> IH* and *IE qa*. When, however, ultimate total reduction was deferred in a sequence involving an inherited guttural and any laryngeal (whether palatal or velar), and the guttural (= early IH velar) and the laryngeal were not juxtaposed until later Indo-Hittite times, an ultimate IH and IE labiovelar resulted,⁶⁷ e.g., PIE *ge'e > early IH ge'é > gb'- > late IH qʷ*. In every

⁶⁴ The dittography of intervocalic stops, e.g., *-tt-*, corresponds etymologically with IE *-t-*; the single writing *-t-* corresponds to IE *-d-*.

⁶⁵ There is no evidence that the aspiration of stops is other than a specifically Indo-European development; in Hittite, where *-h-* is the continuant of at least two of the four laryngeals, the *-h-* does not appear in post-occlusive position except (1) in cases where paradigmatic pressure is involved, e.g., 1 sg. *spant-hi*, and (2) in the word-group 3 sg. *tethai* 'it thunders', etc., for which no explanation is offered here.

⁶⁶ Every total vocalic reduction presupposes a period during which the particular vowel was being reduced. Precisely as in historical Indo-European, the process of vocalic reduction was sometimes arrested, sometimes halted, and sometimes the reduced vowel was restored to full grade. By 'partial reduction' is meant that period or process during which an unfavourable accentual position was shortening a full grade vowel. cf. Kerns-Schwartz, op. cit., §8, and fn. 27.

⁶⁷ The chronological development was probably somewhat as follows: such a sequence as *k̂X* (*X* representing any laryngeal) *> q̂X > qʷX*, whereupon the now juxtaposed laryngeal affected the labiovelar as a unitary phoneme in respect to voice and IE aspiration. Every IH labiovelar would, therefore, imply late total reduction, but the three series for Indo-European as such is accepted here (otherwise Kurylowicz, EI i, 1 sqq.). The guttural series would thus be reduced to a single series in PIE against the two suggested by Kurylowicz, l.c., (who explains, in effect, the origin of the historical labiovelars as due to the effort of the *centum* languages to pronounce a velar *k-* before a palatal vowel), by Meillet, Intro.⁷ 91 sqq., and also by Hirt *IG* i, §§200 sqq. (although with a very different distribution). It is interesting to note how closely Hirt approaches the hypothesis presented here in Hirt-Arntz, *Die Hauptprobleme der indogermanischen Sprachwissenschaft* (Halle 1939), 220; 'Wahrscheinlich hat eine noch ältere Zeit nur zwei *k*-Reihen gekannt; denn das nicht palatalisierte *k* tritt in der überwiegenden Zahl der Fälle vor *a* und dunkeln Lauten auf, während das palatale besonders vor *e* steht. In vorgeschichtlicher Zeit scheint also *k* vor *e*, *i* palatalisiert worden zu sein'. Translated into terms of the laryngeal hypothesis as interpreted in this study, the PIE guttural was palatalised by normal regressive assimilation when it stood immediately before a palatal laryngeal.

instance, the order (i.e., voice or voicelessness, IE aspiration or lack thereof) is determined by the formulae given in the table above, so that all these effects may be set forth as follows.⁶⁸

| | | | |
|---|---|---|---|
| $\left. \begin{array}{l} \text{IH} \\ p' \\ px \end{array} \right\} \text{Hit } p, \text{ IE } ph$ | $\left. \begin{array}{l} \text{IH} \\ p' \\ py \end{array} \right\} \text{Hit } p, \text{ IE } b$ | $\left. \begin{array}{l} \text{IH} \\ b' \\ bx \end{array} \right\} \text{Hit } p, \text{ IE } p$ | $\left. \begin{array}{l} \text{IH} \\ b' \\ by \end{array} \right\} \text{Hit } p, \text{ IE } bh$ |
| $\left. \begin{array}{l} t' \\ tx \end{array} \right\} \text{Hit } t, \text{ IE } th$ | $\left. \begin{array}{l} t' \\ ty \end{array} \right\} \text{Hit } t, \text{ IE } d$ | $\left. \begin{array}{l} d' \\ dx \end{array} \right\} \text{Hit } t, \text{ IE } d$ | $\left. \begin{array}{l} d' \\ dy \end{array} \right\} \text{Hit } t, \text{ IE } dh$ |
| $k' > \text{Hit } k, \text{ IE } kh$ $k_b' > \text{Hit } kw, \text{ IE } q^{\sharp}h$ $kx > \text{Hit } k, \text{ IE } qh$ $k_b x > \text{Hit } kw, \text{ IE } q^{\sharp}h$ | $k' > \text{Hit } k, \text{ IE } q$ $k_b' > \text{Hit } w, \text{ IE } q^{\sharp}$ $ky > \text{Hit } k, \text{ IE } g$ $k_b y > \text{Hit } w, \text{ IE } q^{\sharp}$ | $g' > \text{Hit } k, \text{ IE } k$ $g_b' > \text{Hit } kw, \text{ IE } q^{\sharp}$ $gx > \text{Hit } k, \text{ IE } q$ $g_b x > \text{Hit } kw, \text{ IE } q^{\sharp}$ | $g' > \text{Hit } k, \text{ IE } qh$ $g_b' > \text{Hit } kw, \text{ IE } q^{\sharp}h$ $gy > \text{Hit } k, \text{ IE } gh$ $g_b y > \text{Hit } kw, \text{ IE } q^{\sharp}h$ |

28. Thus all the palatals, two of the velars (*qh*, *qh*), and all the labiovelars arise only from IH clusters whose second member was a laryngeal, whereas IE *q*, *q* sometimes arise from such clusters, and sometimes continue undifferentiated PIE *k* and *g*. In general, it may be said that consonant clusters with a laryngeal in second position show normal regressive assimilation; this is probably also true of bi-laryngeal clusters, with ultimate simplification, e.g., *yx* > *xx* > *x*.⁶⁹

⁶⁸ For the significance of the Hittite orthographies cf. fn. 64. Every Hittite *t* corresponding to an IE (voiceless) *t* was written double in real or apparent intervocalic position.

⁶⁹ Otherwise Sturtevant, *Lang.* 16.273 ff. (1940), who has the medial collision *-!x-* develop a glide > *-!kx-* > IE *-k-* (but if this equation is true, and if a glide *-k-* is developed, how could the resultant IE *-k-* escape becoming *-kh-*?).

III

REDUPLICATION AND INFIXATION

29. Inherent in the laryngeal hypothesis are the principles that (1) every PIE and IH root began with a consonant, so that, in the case of specifically Hittite and Indo-European roots with an apparent vocalic initial, the original consonant must have been a laryngeal; (2) every IE 'original'¹ long vowel arises from the compensatory lengthening of a normal grade (i.e., short) vowel, due to the loss of an immediately following laryngeal.

30. When we examine Indo-European roots with a long initial vowel, we are compelled, therefore, to explain those long vowels as originating from a laryngeal + a vowel + a laryngeal, i.e. *XeX-* (where *X* stands for any laryngeal). Whether prefixed or postfixed, the repetition of a laryngeal of the same class and order may fairly be called reduplication of the initial syllable, and cases of this are exemplified in the following:

1. IE *ēp-* (WP i, 121, *ēpi-* 'companion, friend, comrade' in Skt. *āpi-* 'friend, ally', Gk. *ἥπιος* 'gentle, kind') :: IE *ep-* (WP i, 122, *epi, opi, pi*, near, to' etc., in Skt. *āpi*, Gk. *ἥπι*, *ἥπι*) < PIE *'ēpe*, redup. *'ē-'ēpe*.²

2. IE *ēs-* 'sit' (in Skt. *āsate*, Gk. *ἥσται*³, Hit. *ēs-* id.) :: IE *es-* 'be' < PIE *'ese*, redup. *'ē-'ese*.⁴

3. IE *ār-*⁵ 'cleared land' or the like (in Lat. *ārea* 'open space, courtyard,

¹ By an IE 'original' long vowel is meant a vowel whose quantity is not due to later syllabic loss, later compensatory lengthening due to following tautosyllabic loss, alleged lengthening under the accent, lengthening by contraction etc., but the term refers solely to cases where the quantity of the vowel has hitherto been considered 'long by nature'.

² It is interesting to note that the genetic relationship of these roots has already been suggested, cf. WP i, 122, top.

³ Bois. 322. The rough breathing is analogical, probably borrowed from IE *sed-*. Hirt's alleged **ē-sdtaī* < **sed-* 'sit' is completely disproved by the Hittite form.

⁴ The semantic kinship of 'be' and 'sit' was challenged by Sturtevant when the suggestion was made in a paper read by Kerns and Schwartz at the summer meeting of the Linguistic Society of America, at Ann Arbor, July 1940. It may be noted, however, that Grassmann, *Wörterbuch zum Rigveda*, col. 188 sq., recognises the meanings 'seinen Sitz haben, thronen', 'an einem Ort weilen' (his mg. 3); in the last case also of abstract subjects (his mg. 4), cf. esp. 825.11 *yātrā 'nandās . . . āsate*, and other passages (e.g., 19.6, 105.11, 168.3, 727.2 = 737.4, 965.2); for Greek cf. *πρὸς ἐμὰ ψυχὰς θάσσος ἥσται* Eur., Alc. 604. In all these passages the meaning of the verb is little more than a strong 'be'. Confirmation of a semantic kinship between 'be' and 'sit' is strikingly afforded in a linguistic milieu far more primitive than even reconstructed Indo-European. Alf Sommerfelt, *La langue et la société*, in an analysis of the Aranta language of Australia, states, 81; 'Nous avons déjà vu que la racine *na* signifie "être assis", et qu'elle s'emploie aussi d'une façon que nous devons traduire par "exister" . . .'. Cf. the 'paradigm' of the verb 'to be, exist', 59 sqq. 'Be' and 'sit' are certainly not incompatible semantically. In Indo-European the meaning 'sit' was eventually reserved exclusively for the reduplicated form of the PIE root; but even here the meaning 'be' was never quite completely lost.

⁵ WH i, 65, connects the Latin word with *āreō* 'be dry, dried out' < IE *ās-* 'burn, glow', but this is quite unsatisfactory semantically. WP i, 79 rubricates a root *āro-* 'das Freie, Weite; Raum(?)'.

threshing-floor', Lett. *āra*, *āre*, *ārs* 'the open, out of doors, field', Skt. *ārē* 'in the distance, *ārād* 'from a distance') :: IE *ar-* 'plough' (in Lat. *arō* etc., Hit. *arha* 'out, away, forth', with the primitive meaning preserved in the nom. *arhas* 'boundary, land', dat.-loc. *arhi* 'on a farm') < PIE **ere*, redup. **é-ere*.

4. IE *āk-* 'sharp' in Lat. *ācer*, Gk. *ἄκῆς* *ōzō* (Hesych.) id. :: *ak-* in Gk. *ἄκρον* 'end, tip, edge, highest' etc., *ἀκὴ* 'point', *ἀκίς* 'needle', Skt. *ásri-* 'sharp edge' < PIE **ége-*⁶, redup. **é-ége-*⁷.

31. A reduplicated root can be further modified by any of the methods thus far described, i.e., by prefixation and suffixation, as well as by infixation (described below, §33). Thus, the simplex PIE **ede* 'smell, reek, stink; hate', redup. (unattested) in IE *ād-* is further modified as IE *bhad(h)-* 'feel disgust' (cf. §25.1, above); and again a PIE simplex **yege* 'burn' (cf. IV, 47, below) is similarly characterised as unredup. IE *bhok-* 'burn', redup. *bhōg-* 'bake, roast'.

32. Not every root-internal 'original' long vowel, however, can be ascribed to a reduplication of the first syllable of the postulated or attested PIE simplex. Cases involving the accentual principle observed in §22, above, necessary to account for some initial consonantal alternations of the type *t* :: *d*, are certainly present in, e.g., IE *tēg-* 'burn' > PIE *tē-yege*, where a PIE voiced prefix *de-* (without the accent) would have yielded an IE voiced aspirate, as actually occurs in the sequences *de-yége-ye* > *dyegvy-* > IE *dhegyh-* id., and *be-yége-*⁸ > IE *bhok-*, while *be-yéyege* > IE *bhōg-* 'roast'.

33. Finally, one method of root modification, traces of which persist without phonological obscurations into the historical period, is that of infixation. Thus, PIE simplices, postulated or attested, could be modified by infixes which at a later date appear as *r*, *l*, *u*, *i*,⁶ *n* (later *n*, *m* by assimilation) < PIE *re-*, *le-*, *ye-*, *ie-*, *ne-*. Again, such infixed roots could be further modified by any one or more of the methods previously described. The relative chronology of the productivity of these infixes was, perhaps, that of the order here given, with *ye-* and *ie-* probably still productive in the latest prehistorical period, and *ne-* continuing to be productive (although with a different distribution) in historical Indo-European as a conjugational formative in the verbal paradigm.

34. Thus, beside the PIE simplex **ede* 'eat' (WP i, 118; cf. Hit. Hitt. *etmi*, Skt. *ádmi*), we have the infixed and suffixed form **e-ye-de-ye* (lit. 'food-causing or -giving') > IE *eudh-*⁸ (in Skt. *údhar*, Lat. *uber*) 'udder'.

35. The PIE simplex **xege*⁹ 'pain, shame; sin' is infixed with *ie-* in IE *aig-* 'sick' (WP i, 9; in Lat. *aeger* 'sick', and with later nasalisation), with *le-* in IE *al(e)g-* (e.g., Gk. *ἄλγος*, *ἀλγέω* 'pain, suffer'), and with *re-* in IE *orǵh-* 'testicle' (WP i, 182; in Gk. *ὀρχίς*, Arm. *orǵi-k* id.).

36. Beside the simplex PIE **ebe* 'motion (towards)' (cf. §6.4 above), we have the prefixed and suffixed *de-*ébe-*⁸ > IE *tep-* (WP *top-* i, 743, 'come to, arrive at'

⁶ Gray, op. cit., operates with infixed *ye-* and *ie-*.

⁷ Cf. WP *ed-*, i, 118.

⁸ The length of the initial *ā-* in cognates from this root is not due to an 'original' long diphthong, but to a specifically IE partial reduction *eu-* > *vu-* > *ū-*.

⁹ Cf. §24.1 c, above.

in Gk. *τόπος* 'place'), and the following infixed forms: *de-'é-le-be-'e* > IE *telp-* 'have room or space in' (WP i, 741, in Lith. *telpù* id.); *de-'e-ne-be-'e* > IE *temp-*¹⁰ 'stretch or extend (to)' (WP i, 721; in Lith. *tempiù*, *teĩmpti* id.); *be-'é-re-te* > IE *perb-* in Skt. *parbatì* 'go, move'.

37. Not all cases of Indo-European root-internal diphthongisation, however, are due to the coalescences of earlier sequences which had been infixed in the manner described immediately above. Some, e.g., PIE **eie*¹¹ 'go', **eye*¹² 'perceive', *yere*¹³ 'hold', etc., have a root-internal sonant (which is sometimes syllabic).

38. Granted that the consonantal effects of the laryngeals described in §§8, 26, and 27 above are valid, initial consonantal alternations (especially when these occur in 'triplets') of the same order and class are due not so much to aberrant accentual situations as, rather, to variant laryngeal infixes. Thus, such initial alternations as a voiceless stop :: voiced aspirate (e.g., *t* :: *dh*), descriptively noted by Zupitza¹⁴ and later accepted by Hirt,¹⁵ can be explained satisfactorily only on the assumption of a root with an original voiced stop (e.g., *d-*) modified by the alternate presence or absence of a voiced or voiceless laryngeal (e.g., *d*, *dZ*, *dH*). Similarly, alternations of the type *t* :: *d* :: *th* in initial position must be due to a root with initial *t-* modified in precisely the same manner. The following examples, of both types, materially confirm our hypothesis.

39. 1. OIc. *kefser*¹⁶ 'captive' < PIE, IH *gebe* :: PIE *ge-xe-be-He* > IH *grebH-* > IE *gap-*¹⁷ in Lat. *capiō* 'seize', Goth. *haban* 'have' :: PIE *ge-ze-be(-Ze)* > IH *geb(Z)-* > IE *ghab(h)-*¹⁸ in Lat. *habēō* 'have', Goth. *gabei* 'wealth'.

2. IE *der-*¹⁹ < PIE, IH *dere* must be inferred from IE *drā-*, *dreu-*, *drem-* etc., 'run' in Skt. *drāti*, *drāvati*, *drāmati* (lex.) id., Gk. *ἀπο-διδράσκω* 'run away' :: PIE *de-'e-re* > IH *d'er-* > IH *ter-*,²⁰ the basis for such extensions as IE *trā-* in Lat. **trāre* (cf. *intrāre*, *extrāre*), and *tregh-* in Lat. *trahō* 'drag, draw', Goth. *þragjan* 'run' :: PIE *de-ye-re* > IH *dyer-* > IE *dh(e)r-*, the basis for the IE extension *dh(e)r(e)gh-*²¹ in Gk. *τρέχω* 'run'.

¹⁰ It will be noted that the prehistoric nasal infix, in sharp contrast to its probable descendant (the historic presential nasal infix), runs throughout the paradigm.

¹¹ Cf. IV. 17 below.

¹² Cf. IV. 31 below.

¹³ Cf. IV. 49 below.

¹⁴ KZ 37.387 sqq. (1900).

¹⁵ IG i, § 346, and cf. § 1 c, above.

¹⁶ Zupitza, op. cit., 391. Interestingly enough, he offers a number of 'triplets' which fit nicely into our scheme: 'Gelegentlich sind alle drei Stufen, media, media aspirata und tenuis, bezeugt . . .' His explanation, however, 393, is that the earliest Indo-European probably made no distinction between the three 'grades', and that all three were pronounced indifferently.

¹⁷ WP i, 342.

¹⁸ s.v. *gap-* WP i, 344; cf. also *ghab(o)lo-* 'fork' WP i, 533.

¹⁹ WP 3. (*der-*) etc., 'run, tread' i, 791.

²⁰ Perhaps in 4. *ter-* 'cross, over, through' WP i, 734, and 5. *ter-* 'over' i, 735. Extensions in *trāgh-*, *tregh-* i, 752 and *treg-* i, 755.

²¹ Cf. WP i, 874.

3. PIE *bele* > IE *bel*²², the basis for IE *blē*²³ in Gk. βλήχῃ 'bleating', etc., Lat. *bālāre* 'bleat' :: PIE *be-e-le* > IH *b'el-* > IE *pel-*, the basis for the extensions seen in Lat. *plōrāre* 'weep', etc., :: PIE *be-ye-le* > IH *byel-* > IE *bh(e)L*²⁴ in Lat. *flēō*, *flēre* 'weep', Skt. *bhāṇati* 'speaks', *bhaṣā-* 'barking, chiding', etc.

4. PIE *kcle* > IE *qel-* in *qol(e)uo*²⁵, cf. Lat. *calvus* 'bare, bald' :: PIE *ke-re-le* > IH *k:el-* > IE *gal*²⁶, cf. OCS *golb* 'bare, naked', OHG *kalo*, NE *callow* :: PIE *ke-xe-le* > IH *kxel-* > IE *qhal-* in Skt. *khalati*²⁷ 'bald'.

5. IE *teg*²⁸ < PIE, IH *tege-* in Lat. *tegō* 'cover', *tegumen* 'covering', etc. :: PIE *te-Ze-ge-Ze* > IH *tZegZ-* > IE *daʒgh-* in Skt. *daṛghati* (lex.) 'cherish, protect' :: PIE *te-He-ge* (but the *H* is presumably²⁹ λ', cf. Gk. στέγω 'cover') > IH *tHeg-* > IE *(s)theg-* in Skt. *sthag-* 'cover, protect'.

40. Here again (cf. §9 above) not all roots contain all three members of the 'triplet', and only those alternations involving an aspirated stop permit us to restore the original initial with certainty. Thus, all the conditions necessary for consonantal alternation in medial position are valid also for consonantal alternation in initial position.

41. Theoretically, an Indo-European root with a long initial vowel could have arisen not only from a reduplication of the initial syllable (with initial laryngeal) of the primitive root, but also from a laryngeal infix, e.g., *'e'e* > IE *ē*, *'e'e* > IE *ā*; only the existence of the postulated simplex, or of sequences implying that simplex (e.g., prefix + simplex, simplex + suffix, simplex + [other] infix) can reveal the nature of the original root. Similarly, an Indo-European root with an initial stop could have come from a sequence either of a stop-prefix + a root with an initial laryngeal, or of a root with an initial stop modified by a laryngeal infix. Here, again, only the postulated simplex, or of sequences implying it, can reveal the nature of the original root.

42. It seems probable that the phoneme *s* was also capable of being used as an infixal element; cf. the following:

1. Skt. *ādga*³⁰ 'stalk', Lith. *uodegà* id., < PIE *yede-ge* :: Gk. ὄζος 'branch', Arm. *ost*, Goth. *asts*, Hit. *hasdwer* id. < PIE *ye-se-de*³¹

2. Gk. ὄσχος 'twig, sprout', Pahl. *aʒg* 'branch' < PIE *'e-se-ge*³² :: PIE *'ege*, a root which must be assumed from such sequences as IE *perg-* 'pole, stem, stalk' (cf. OIc. *forkr* < PIE *be-'e-re-ge*); for other sequences from this root cf. IV. 8 below.

3. The infixal elements *re-* and *se-* are exhibited in the IE roots *perd*³³ 'fart

²² Whether or not this (like some other roots) was in imitation of the sound of snoring or other animals, the root became subject to modification as soon as it passed into the language.

²³ Cf. WP ii, 120.

²⁴ Cf. 8. *bhel-* WP ii, 812.

²⁵ WP i, 447.

²⁶ WP i. *gal-* i, 537.

²⁷ Monier-Williams 338, col. 2.

²⁸ WP i. *(s)teg-* ii, 620.

²⁹ But not necessarily, since Greek exhibits both initial and medial σθ.

³⁰ WP postulates a root *ǵ(d)ego-* i, 175.

³¹ Cf. *ozdos* WP i, 186.

³² Or with suffix, *'e-se-ge-Ze* > IH *'esgZ-* > IE *ezgh-*, s.v. *ozgho-* WP i, 185.

³³ WP i. *perd-* ii, 49.

(loudly)', cf. Skt. *pardate* (lex.), Gk. *πέρδω* :: *pezd*-³⁴ 'fart (softly)', cf. Lat. *pēdō*, Slov. *pezdēti* id.

43. Such collocations as **perk*- beside **prek*-, or **nebh*- beside **enebh*- beside *(e)*mbh*- conclusively demonstrate that infixal elements were originally syllables composed of a sonant (or a spirant) + a vowel. The infixes *re*-, *le*-, *ye*-, *je*-, *ne*-, are, therefore, diphthongs of the type of sonant plus vowel. Whether or not the laryngeals are also sonants, however, is not immediately apparent, but the evidence seems against it. Thus, *x* and *y*, at least, cannot enter the sonant category, since sequences with zero-vocalism + *y*- are transparently continued in Hittite *hw*-, while the zero-grade vocalism of any laryngeal + *y*- (and, very probably, any other sonant) becomes the *spiritus asper* in Greek. Finally, since laryngealists are unanimously agreed that all laryngeals disappear in intervocalic position (we might better say that they are 'aspirated' or 'lenited' out of existence), it is here suggested that all the laryngeals are spirants.

EXCURSUS A

44. The one-time identity of the phonemes *r* and *l* is conclusively established by the following correspondences (all references are to WP):

1 *er*-, *or*- i, 135 'eagle' :: 7 *el*-, *ol*- i, 164 'large water-bird'; 2 *er*- i, 135 'buck, ram' :: 6 *el*-, *ol*- i, 154 'stag, elk'; 3 *er*- i, 136 'be or set in motion' :: *el(ā)*- i, 155 'drive'; 2 *erē*-, *rē*- i, 144 'rest' :: 3 *el*- i, 152 'rest'; *ōr*-, *or*- i, 182 'speak, call' :: 5 *el*-, *ol*- i, 153 of various sounds; 5 *yer*- i, 270 'turn, bend' :: 7 *yel*- i, 298 'turn, wind'; 3 *yer*- i, 268 'wet' :: *yelg*-, *yelg*- i, 306 'wet'; 4 *yer*- i, 269 'wool, sheep' :: 4 *yel*- i, 296 'hair, wool, grass'; 9 *yer*- i, 284 'perceive' :: 1 *yel*- i, 293 'see'; 12 *yer*- i, 285 'tear' etc. :: 8 *yel*- i, 304 'tear' etc.; 5 *per*- ii, 40 'sell' :: 2 *pel*- ii, 51 'sell'; 8 *per*- ii, 42 'beat' :: 10 *pel*- ii, 51 'drive, set in motion by beating, push'; 4 *mer*- ii, 276 'rub' :: 1 *mel*- ii, 284 'rub'; *merg*- ii, 283 'wipe' :: *melg*- ii, 298 'wipe'; *mrey*- ii, 313 'speak' :: *mley*- ii, 313 'speak'; 2 *reḡ*-, *reḡ*- ii, 365 'damp, wet, rain' :: 1 *leg*- ii, 412 'trickle, drip'; 4 (s)*qer*- ii, 573 'cut' :: 1 (s)*qel*- ii, 590 'cut'; 3 (s)*qer*- ii, 568 'turn, bend' :: 4 (s)*qel*- ii, 597 'bend, crooked'; 2 *ster*- ii, 635 'star' :: (s*tel*-) ii, 635 'star'; 8 (s)*ter*- ii, 641 'unclean wetness, dung' :: 1 (s)*tel*- ii, 642 'drip, urinate'; 5 *ster*- ii, 638 'spread out' :: 2 *stel*- ii, 643 'spread out'; 1 *ster*- ii, 627 'stiff, hard' :: *st(h)el*- ii, 643 'put (up), stand stiff'. For practical considerations *r* and *l* will be kept distinct, save that the symbol *R* indicates a prehistoric phoneme which develops into *r* and *l*.

45. Another alternation which has, perhaps, not hitherto been noted in Indo-European, is that between *y* and *j*. Cases illustrating this type of alternation, apparently without essential change of meaning, will be found in the body of roots discussed in Chapter IV.

EXCURSUS B

46. Of the various types of root modification it is impossible to say which, if any, are older than the others; all seem in vigorous use as far back as we can go. It is interesting to note that, in general, the same pattern of types of modification

³⁴ WP ii, 68.

obtained in PIE times as, in what now appears to be a somewhat more restricted way, in the far later IH and IE periods. On the other hand, most of the older modifications were no longer felt as such, and the old complexes, now become neo-simplices through coalescence, were themselves subject to renewed modification. So to **liq^{ue}-*, the zero-grade of the IE neo-simplex *leiq^{ue}-*, arose the specifically IE modified form *li-n-q^{ue}-* as in Lat. *linquō* 'leave', etc.

47. Thus far the following structural types have been noted, for each of which a symbol in boldface will be used in this study:

R unmodified root, or simplex.

^rR initially reduplicated root.

Rⁱ root with infix (-*le-*, -*re-*, -*ye-*, -*ie-*, -*ne-*).

^rRⁱ initially reduplicated root with infix.

Rs root plus suffix.

^rRs reduplicated root plus suffix.

R's infixed root plus suffix.

pR prefix plus root.

p^rR prefix plus reduplicated root.

pRⁱ prefix plus infixed root.

p^rRⁱ prefix plus reduplicated infixed root.

pRs prefix plus root plus suffix.

p^rRs prefix plus reduplicated root plus suffix.

pR's prefix plus infixed root plus suffix.

p^rR's prefix plus reduplicated infixed root plus suffix.

The symbols for bi-radical compounds (e.g., **R + R**, **pR + R**, etc.) are self-evident.

IV

SELECTED ROOTS

ROOTS WITH INITIAL '

1. 'ebe (A) 'throw, strike (by throwing), injure'. R unattested. Rⁱ 'e-ye-pe > IE *ye*p-¹ 'throw; weapon' in Skt. *vápati* 'throw, cast, strew; cut, shear', Gk. *ῥπλον*² 'weapon'. R's 'e-ye-pe-Ze > IE *ye*b-³ 'weapon' in Goth. *wepna* id.; 'e-re-pe-He > IE (e)r(e)ph- in Skt. *rphati*, *rṃphati* 'hurt, kill' (lex.); 'e-re-pe-Ze > IE *erb*- in Skt. *arbati* 'hurt, injure, kill' (lex.). pRⁱ *se*-e-ye-pe > *seup*-, *syep*-, *sup*-⁴ 'fling, hurl, pour out' in Lat. *supō*⁵ 'throw', OCS *sъpъ* 'strew'.

2. 'ebe (B) '(go or move) up to, to (but not through or around), over'. R IE *eb* in Lat. *ob* 'over against', Osc. *úp*, etc., cf. § 6.4a. R's 'ebe-He > IH 'ep- in IE *epi* 'to', cf. § 6.4b; 'ebe-Ze > IE *ebh*- 'up to, over', cf. § 6.4c. R's 'e-re-be-Ze > IE (e)rebh-⁶ 'vault or roof over' in Gk. *ἐρέφω*⁷ id., and the sb. *ῥροφος* 'roof'; here also the IE root *rebh*-⁸ 'move, play' in Ir. *reb* 'play', MHG *reben* 'move, touch'. R's 'e'ebe-He > IH 'e'p- in IE *ēp*- 'companion, friend', cf. § 30.1. pRⁱ *se*-e-ne-be > IE *semb*- in Skt. *sambati* 'move, go' (lex.); *se*-e-re-be- > IE *serb*- in Skt. *sarbatī* 'go, move' (lex.). pR's *de*-ebe-He > IE *tep*-⁹ 'come to, arrive at' in Gk. *τόπος* 'place'; *ré*-ebe-He > IE *rēp*-¹⁰ 'creep' in Lat. *rēpō* id. pR's *de*-e-ne-be-He > IE *temp*-¹¹ in Lith. *tempū* 'extend, stretch, draw'; *de*-e-le-be-He > IE *telp*-¹² in Lith. *telpū* 'have room or space in'; *se*-e-re-be-He > IE *serp*-¹³ 'creep' in Skt. *sārpati*, Gk. *ῥπω*, Lat. *ser-pō* id., and very probably the underlying meaning in Hit. (GIŠ) *sarpas* 'brushwood' and (KUŠ) *sarpas* 'snake-skin' (?).

3. 'ete 'move swiftly, fall, fly, go'. R IE *et*¹⁴ in Lat. *annus*¹⁵ (<**et-nó*-) 'year', Skt. *átati* 'goes, wanders'. R 'e'ete > IE *ēl-ro*-¹⁶ 'moving very swiftly' in OHG *ātar* 'acer, celer, sagax', Lett. *ātrs* 'swift, violent'. Rⁱ 'e-ré-te > IE *ret*- 'roll, wheel' in Lat. *rota* 'wheel', etc., cf. § 4.4a. R's 'e-ré-te-He > IE *reih* 'run, roll', cf. § 4.4b; 'é-le-te-He > IE *elth*- in Gk. *ἐλθω*¹⁷ 'come'; 'e-sé-te-Ze > IE *sed*-¹⁸ 'go'

¹ WP i, 256.

² Otherwise, e.g., Bois. 270, s.v. *ῥπω*, and WP ii, 487, s.v. *sep*- with quite unsatisfactory semantics.

³ WP i, 257, Feist 561.

⁴ WP ii, 524.

⁵ WH i, 356. The *i* for *u* in *dis-sipō*, etc., is not phonological, cf. Leumann-Hofmann 85.

⁶ WP 2. *rebh*- ii, 371.

⁷ Bois. 277.

⁸ WP 1. *rebh*- ii, 370.

⁹ WP *top*- i, 743, Bois. 975.

¹⁰ WP ii, 370, EM 861.

¹¹ WP i, 721.

¹² WP i, 741.

¹³ WP ii, 502, Bois. 283.

¹⁴ WP s.v. *at*- i, 41.

¹⁵ WH i, 51, Feist 62 s.v. *ap-nam*.

¹⁶ WP i, 118.

¹⁷ Contra Bois. 242.

¹⁸ WP ii, 486, but cf. Bois. 685, who connects this root with *sed*- 'be seated'.

in Gk. *ὁδός* 'road, way' etc. **pR** *be-'ete* > IH, IE *ǵet-* 'fall, fly' in Skt. *pátati* id., cf. § 4.3a and § 13.3a; *ǵe-'ete* > IH, IE *ǵet-*¹⁹ 'year' in Hit. *welt-anza* id., Gk. *ἔτος* id., Lat. *ve-tus* 'old'. **pR**ⁱ(s) *be-'e-ne-te-(He)* > IE *penth-* 'go, way, path' (cf. § 4.3c) in Skt. *pánthan-* 'path, road', Avest. *pantan-, pañan-* id., Lat. *pōns* 'bridge', Goth. *finþan* 'find'; *ge-'e-ǵe-te-Ze* > IE *keid-*²⁰ 'fall' in W. *cwydd* 'fall', NE *hit*; *be-'e-le-te* > IE *pelt-* in Lith *pàlti* 'fall'. **pRs** *be-ête-Ze* alternating with *pé-'ete-Ze* > IH, IE *pēd-* 'foot; go, fall; place, spot, etc.' in Hit. *petan* 'place', Toch. A *pe* 'foot', Goth. *fotus* id., cf. § 4.3b; *ge-'ete-Ze* > IE *ked-*²¹ 'fall' in Lat. *ca-dō* 'fall', Skt. *śad-* 'fall off or away' in pf. *śasāda*, fut. *śatsyati*.

4. *'ede* 'dung; stench therefrom'. **R** unattested. **Rs** *'ede-Ze* > IE *edh-* perhaps in Gk. *ἐθ-μή* 'vapour' (Hesych.). **pR**ⁱ *be-'e-re-de* > IE *perd-*²² 'fart (loudly)' in Gk. *πέρδομαι*, Lith. *pėrdžiū* id.; *be-'e-se-de* > IE *pezd-*²³ 'fart (gently)' in Lat. *pēdō*, Gk. *βδέω*, Czech *bzdíti* id.; *me-'e-re-de* > IE (s)*merd-*²⁴ 'excrement' in Lat. *merda* id., Lith. *smirdėti* 'stink', OCS *smradъ* 'filth, stink'. **pR**ⁱs *ge-'e-ǵe-de-Ze* > IE *keudh-*²⁵ 'dung, excrement' in Lith. *šūdas* id.

5. *'ege* (A) 'speak, call, cry'. **R** Probably in the first pers. pro. IE *eg-* 'the speaker', or the like; for the historical forms cf. § 4.6a. **R** *'ē'ege* > IE *ēg-*²⁶ 'speak, say' in Lat. *aiō* 'speak', Gk. *ἡμί*, OIr. *égim* 'cry'. **R**ⁱ *'é-ǵe-ge* > IE *eig-*²⁷ in Goth. *af-aikan* 'deny'; *'e-ne-ge* > IE *eng-*²⁸ in NIr. *ong* 'groan'; *'e-ǵe-ge* > IH *'ǵeg-* in Hit. *wek-* 'ask, demand, beg'. **Rs** *'ege-'e* > IH, IE *ek* 'I', cf. § 4.6b, and Arm. *asem* 'speak'; *'ege-ye* > IE *ēgh-* 'I' in Skt. *ahám*, etc., cf. § 4.6c; *'egé-ǵe* > IE *geu-*²⁹ 'call, cry, groan' in Skt. *gáva-te* 'speaks articulately', Gk. *γῶος* 'groan'. **R**ⁱs *'e-sé-ge-'e* > IE *sequ-*³⁰ 'say, relate' in Lat. *in-seque* 'say', Gk. *ἐνέπω* 'relate', Lith. *sekti* id., *sakýti* 'say'; *'e-ǵe-ge-'e* > IE *ǵek-/ǵequ-*³¹ 'say; jest, play' in Lat. *iocus* 'jest', Gk. *ἐλία* 'plaything, amusement'; *'e-ne-ge-xe* > IE *eng-*²⁸ 'sigh, groan' in Goth. *aihttron* 'beg', Gk. *οἶκτος* 'pity, compassion'; *'e-re-ge-'e* > IH *'erǵu-* 'pray' in Hit. *arkuwa-* and very probably in Skt. *ārcati* 'praise, worship, honour, reverence; shine'; *'e-ǵe-ge-ye* > IE *eǵeq^h-*³² 'speak, pray, praise' in Gk. *εὔχομαι* 'pray, vow, vaunt', Lat. *voveō* 'make a solemn promise, vow'. **pR**ⁱ *le-'e-ǵe-ge* > IE *leug-*³³ 'ask' in Lith. *luguóti* id. **pR**ⁱs *be-'e-re-ge-'e* > IE *p(e)r(e)k-*³⁴ 'ask, beg' in Toch. B *prek-* id., Lat. *pōscō* id.; *de-'e-le-ge-xe* > IH *tel/rq-*³⁵ in Hit.

¹⁹ WP i, 251, Bois. 293.

²⁰ WP i, 364.

²¹ WP s.v. i, 339, and cf. § 13.3b above.

²² WP ii, 49, Bois. 771.

²³ WP ii, 68, EM 748.

²⁴ WP ii, 691, WH ii, 74.

²⁵ WP i, 467, Bois. 530 s.v. *κυθρόν*.

²⁶ Cf. WP i, 114, WH i, 25, Bois. 324.

²⁷ WP i, 105.

²⁸ Cf. WP i, 133 s.v. *eng-*.

²⁹ WP i, 634, Bois. 154.

³⁰ WP ii, 477, Bois. 255, WH i, 702 s.v. *inquam*.

³¹ WP i, 204; cf. also WH i, 716 and Bois. 334. For the alternation of the palatal with the labiovelar cf. §§ 27-8 above.

³² WP i, 110, Bois. 300.

³³ WP ii, 414.

³⁴ SSS 449, WP ii, 44, EM 794.

³⁵ Cf. WP *tolq-* 'speak' i, 744.

tarkumma- 'explain, announce', Skt. *tarkayati* 'conjecture, suppose', OCS *tlъkъ*, Russ. *tolkъ* 'meaning, explanation', OIr. *ad-thuch-* 'thank', *to-thuch-* 'ask'; *le-'e-ye-ge-ye* > IE *leugh-*³⁶ 'lie, tell a lie' in Goth. *liugan*, OCS *lъžiti*, and probably also 'oath' in Goth. *liugan* 'wed'; *se-'e-ne-ge-ye* > IE *senq^h-*³⁷ 'chant, sing' in Goth. *siggwan* id. pRs *ye-'ege-'e* > IH *yek/q^h-*³⁸ 'speak, say, word' in Hit. *wewakk-* 'demand, ask, beg', Skt. *vācas-* 'word', Gk. *ἔπος* id., Lat. *vocō* 'call'.

6. *'ege* (B) 'eye, see'. R Probably in Arm. *akn* 'eye' < **eg-*. Rs *'ege-'e* > IH, IE *'eq^h-*³⁹ in Toch. A *ak*, B *ek* 'eye', Hit. *sakwa*⁴⁰ 'the eyes', Lat. *oculus* id., etc.; *'ege-xe* > IE *eq^h-*⁴¹ 'consider' in Goth. *aha* sense, understanding'. Ri *'e-ré-ge* > IE *reg-*⁴² 'see' in Lith. *regiù* id.; *'e-le-ge* > IE *leg-*⁴³ 'see' in OE *lōcian*, NE *look*, Gk. *λογάδες* 'whites of the eyes, pupils', Toch. A and B *lāk*⁴⁴ 'see'. pRs *be-'ége-'e* > IE (s) *pek^h-*⁴⁵ 'spy, observe, see' in Toch. A and B *pāk* 'have in view', Lat. *speciō* 'perceive, look at', Skt. (s) *pāśyati* 'see', OHG *spehon* 'observe'; *ge-'ege-'e* > IE *q^hek^h-*⁴⁶ 'appear, see, show' in Gk. *τέκμαρ* 'sign', Avest. *cašman-* 'eye', alternating with IE *kēk^h-*⁴⁷ 'look, appearance' in OIr. *cucht* 'external appearance, species', OIc. *hōltr* 'kind, species, appearance'. pR(s) *be-'e-le-ge* > IE *pelg-* (or, with *-'e-* suffix, *pelq^h-*) in Toch. A and B *pāl^h-*⁴⁸ 'look, appear, shine'.

7. *'ege* (C) 'water; wet; drink'. R unattested. Rs *'ege-'e* > IH *'eq^h-*⁴⁹ in Hit. *aku-*, *eku-* 'drink', Toch. *yok* id., Lat. *aqua* 'water', etc., alternating with IE *ek^h-* in the Skt. river-names *Aśvarathā*, *Aśvaparnī*, etc. Rs *'é-ge-'e* > IE *ēq^h-* in OIc. *ægir* 'sea, god of the sea', Gk. *Ὠκεανός*⁵⁰ 'Oceanus'. Ri *'e-ye-ge* > IE *yeq^h-*⁵¹ 'damp, wet' in Gk. *ὕγρὸς* 'wet', ON *vo^hkr* id.; *'e-ré-ge* > IE *reg-*⁵² in Lat. *rigō* 'water, wet', OIc. *rakr* 'damp'. Rs *'e-ré-ge-xe* > IE *reg-*⁵³ in Lith. *rōkti* 'rain gently'; *'e-ré-ge-Ze* > IE *reg^h-*⁵⁴ in Goth. *rign* 'rain'. pR(s) *de-'é-ne-ge* > IE *teng-*⁵⁵ in Gk. *τέγγω* 'wet, moisten', Lat. *tingō* id.; *me-'e-se-ge* > IE *mezg-*⁵⁶ in Lat. *mergō* 'dip in water', Skt. *mājjati*, Lith. *mazgōti* 'wash'; *ye-'e-le-ge* > IE *yelg-*⁵⁶ in OHG *welc*

³⁶ WP 2. *leugh-* ii, 414, Feist 334, and WP ii, 415, Feist 333.

³⁷ WP ii, 496, Feist 419.

³⁸ WP i, 245, Bois. 269.

³⁹ WP i, 169 s.v. *oq^h-*.

⁴⁰ The Hittite word better here because of the labiovelar; actually, the initial *s-* is due to a prefixed or infixed *se-*.

⁴¹ WP i, 169, s.v. *oq^h-*.

⁴² WP ii, 366.

⁴³ WP ii, 381, Bois. 585.

⁴⁴ SSS 463.

⁴⁵ WP ii, 659, EM 962, SSS 448.

⁴⁶ WP i, 510, Bois. 950.

⁴⁷ WP i, 456 s.v. *koktu-s*.

⁴⁸ SSS 450.

⁴⁹ Cf. WP i, 34, WH i, 60, EM 64, Couv. 89. The IE *a-* vocalism must stand for a reduced vowel. For a discussion of the relationship of 'drink' and 'water', cf. MS 49.

⁵⁰ Bois. 1080.

⁵¹ Bois. 997, cf. WP i, 248, s.v. *yeq^h-*.

⁵² EM 865.

⁵³ Feist 397.

⁵⁴ WP i, 726, Bois. 947, EM 1041.

⁵⁵ WP ii, 300, EM 610.

⁵⁶ WP i, 306.

'damp', Lith. *vilgau* 'wet, moisten'. **pR(s)** *ge-'ege(-He)* > IE *kēg-/k-/q^h-* in Toch. *tsuk*⁵⁷ 'drink' (used to 'supplete' the paradigm of *yok*); *sye-'ege-'e* > IE *syeq^h-*⁵⁸ 'self-water(ing)' in Lett. *svakas* 'resin, gum', OCS *sokъ* 'sap'. **pR**'s *de-'e-ye-ge-'e* > IE *l(e)yeḱ-*⁵⁹ in Goth. *þwahan* 'bathe', Skt. *tósate* 'drip'; *de-'e-re-ge-xe* > IE *tre(n)q-*⁶⁰ in Lith. *trenkù* 'wash', Ir. *fo-thrucud* 'bathe', W. *trochi* 'dip in water, bathe'; *me-'e-re-ge-'e* > IE *mregh-*⁶¹ in Gk. *βρέχω* 'wet, moisten', Lett. *merga* 'gentle rain'; *ye-'e-le-ge-xe* > *yeḱq-*⁶² in OIr. *folcaim* 'bathe, wash', Lett. *valks* 'wet, damp', OHG *welh* id. **R + R** 'ege + yele > IE *q̥hl-*⁶³ in OPr. *aglo* 'rain', Gk. *ἀχλὺς* 'darkness, mist'.

8. 'ege (D) 'stem, sprout, shoot, twig, pole'. **R** unattested. **R**'s 'e-se-ge-'e > IE *ezgh-*⁶⁴ in Pahl. *azg* 'branch', Gk. *δῶχος* 'sprout, shoot'; 'e-ré-ge-xe > IE *req^h-*⁶⁵ in Lith. *rék-lės* 'frame of poles for drying', OIc. *rá* 'pole'. **Rs** 'egé-le > IE *gel-* in Arm. *koṭr* 'branch, twig', Russ. *gol'čjd* 'twig'. **pR**'i be-'e-re-ge > IE *perg-*⁶⁶ in OIc. *forkr* 'club, cudgel'. **pR**'s me-'e-se-ge-'e > IE *mezgh-*⁶⁷ in Gk. *μόσχος* 'sprout, shoot', Lith. *māzgas* 'eye, bud (on tree)'; re-'e-ḱe-ge-xe > IE *reiq^h-*⁶⁸ 'pole, staff' in Swed. dial. *rí* 'pale, pole', MLG *rick, reck* 'long thin pole', OHG *rigil* 'rail, bar'.

9. 'eme 'hand, take'. **R** IE *em-*⁶⁹ in Lat. *emō* 'take, buy', OCS *imq* 'take'. **R**'e'eme > IE *ēm-* 'take' in Lith. prt. *emiaũ* 'took', Lat. p.p. *ēemptus* 'taken'. **R**'i 'e-né-me > IE *nem-*⁷⁰ 'take, distribute' in Gk. *ρέμω* 'distribute, share', Goth. *niman* 'take'; 'e-ḱé-me > IE *ḱem-*⁷¹ in Skt. *yamati* 'holds'. **pR** *ge-'eme* > IH *kem-*⁷² 'by, with, along' in Lat. *com-* id., and, with participial extension, *k̄m-ló* > Hit. *katta* 'afterwards, together, down; with, under; in, on', Gk. *κατά* 'down from, towards, along, by', Goth. *handus* 'hand'.

10. 'ene 'pull, work'. **R** IH 'en- in Hit. *an-iya-* 'work, perform, celebrate', IE *en-* in Lat. *onus* 'burden', cf. § 13.1d. **R**'i 'é-se-ne > IH 'es(ṭ)n- in Hit. *asnu-*, *assanu-* 'prepare', IE *es(ṭ)n-* in Goth. *asneis*, OE *esne* 'day-labourer'; with variant accentuation 'e-sé-ne > IE *sen-*⁷³ in Skt. *sanóti* (< *sṇ-neu-) 'acquire, gain', Gk. *ἀρίω* 'effect, accomplish'; 'e-ye-ne > IE *yen-*⁷⁴ in Skt. *vánati*, *vanóti* 'attains, wins', Goth. *winnan* 'suffer, endure', OIc. *vinna* 'work', OE *winnan* 'work, suffer'. **pR** be-'éne > IE *pen-* 'work, toil, suffer; pull', in Toch. *pānw* 'pull', and cf. § 13.1a; de-'éne > IE *ten-* 'pull, stretch', cf. § 13.1b; ge-'éne > IE

⁵⁷ SSS 484.

⁵⁸ WP ii, 515 s.v. *s(y)aq^ho-s*.

⁵⁹ WP i, 747 s.v. *tyaq-*.

⁶⁰ WP i, 759.

⁶¹ WP ii, 280 s.v. *meregh-*, Bois. 133.

⁶² WP i, 306.

⁶³ WP i, 41, s.v. *aḡhl(u)-*, Bois. 103.

⁶⁴ WP i, 185, Bois. 725.

⁶⁵ WP ii, 361.

⁶⁶ WP ii, 48.

⁶⁷ WP ii, 308, Bois. 646.

⁶⁸ WP ii, 346.

⁶⁹ WP i, 124, WH i, 400, where cf. suggested 'rhyme-roots' *ḱem-* and *nem-*.

⁷⁰ WP ii, 330, Bois. 662, Feist 375.

⁷¹ WP i, 207.

⁷² WP i, 458, s.v. *k̄om*; cf. also WH i, 251, Couv. 177, Bois. 420, LS 832, SHG § 111.

⁷³ Cf. WP ii, 493.

⁷⁴ WP i, 260, where the root is confused with words for 'desire, love'.

ken- 'employ bodily effort, work; empty', cf. § 13.1c. **pRs** *de-'éne-se* > IE *tens*⁷⁵ 'pull, stretch, span' in Skt. *tamsayati* 'pulls hither and thither', Lith. *tęsiù* 'stretch by pulling'; *de-'éne-ke* > IE *tenq*⁷⁶ 'stretch, extend; pull together, contract' in Goth. *beihs* 'time', Lith. *tenkù* 'extend, attain to', Skt. *tanakti* 'contracts', Ir. *técht* 'curdled'. **pR** + **R** *ge-'ene* + *teHe* > IE *q^uenth*⁷⁷ 'endure, suffer' in Gk. *πένθος* 'suffering, misfortune', Lith. *kenčiù* 'endure, suffer', OIr. *céss(a)im* 'suffer'; *de-'éne* + *ge:e* > IE *tengh*⁷⁸ 'stretch, extend' in OCS *tegnęti* 'pull', and the variant (unaccented) *te-'éne-ge:e* > IE *thengh-* in Avest. *θang-* 'pull'.

11. *'ere* (A) 'speak'. **R** in IH *'er-* > Hit. *ariya*⁷⁹ 'speaks', IE *er-* in Skt. *dryati* 'praises'. **'R** *'é're* > IE *ēr*⁸⁰ in Lat. *ōrō* 'speak, plead, pray', Gk. *ἀρά* 'prayer', Russ. *orū* 'cry'. **pR** *be-'éRe* > IE *pel*⁸¹ 'speak (loudly)' in Goth. *spill* 'saga, fable', OHG *spel*, OE *spell* 'narration, talk'; *de-'ere* > IH *ter-* in Hit. *dara-* 'declare, explain, promise'; *syē-'ere* > IE *syer*⁸² in Skt. *svāratī* 'sounds, makes sounds', Lat. *sermo* 'speech' and Lat. *susurrus* 'whisper'; *ye-'ére* > IH *y'er-* in Hit. *we-riya*⁸³ 'invite', IE *yer*⁸⁴ 'speak' in Gk. fut. *ἐπω* 'shall speak', Skt. *vratā-* 'will, command, law'. **pRs** *me-'eré-ye* > IE *mreu*⁸⁵ in Skt. *brāvīti* 'speaks', Avest. *mraiviti* id. **pR** + **R** *ye-'ere-deye* > IE *yerdh*⁸⁶ 'word' in Lat. *verbum*, Goth. *waúrd* id., Lith. *vardas* 'name'.

12. *'ere* (B) 'loose, slack, apart; strew, scatter, separate'. **R** IE *er*⁸⁷ in Gk. *ἐρᾶ* 'earth', OHG *ero* id. **Ri** *'e-ye-re* (with varying accentuation) > IE *(e)u(e)r*⁸⁸ in Gk. *εὐρύς* 'wide', Skt. *urū-* id., cf. Skt. *vāra-* 'surrounding, encompassing'. **Rs** *'ere-'e* > IE *erē*⁸⁹ in Gk. *ἐρημος* 'desert, isolated', Lat. *rārus* 'having intervals or interstices, isolated, scarce, rare', and (<*'eRe-'e*) Lat. *lā-tus* 'wide'; *'eré-ye* > IE *reu*⁹⁰ in Avest. *ravah-* 'open space', Lat. *rūs* 'country', Goth. *rums* 'roomy; place', and with variant accentuation *'ére-ye* > IE *ery*⁹¹ in Lat. *arvum* 'field', Welsh *erw* id.; *'ére-te* > IE *ert-* in Goth. *atŕþo* 'earth'. **pR** *be-'ére* and *pe-'ére* > IE *(s)p(h)er*⁹² 'strew, sprinkle' in Hit. *ispar-* 'spread', Gk. *σπείρω* 'sow', Arm. *sp'rem* 'disperse', MHG *spreitan* 'spread, extend'; *de-'ére* > IE *(s)ter*⁹³ 'spread out, strew'

⁷⁵ WP i, 727.

⁷⁶ WP i, 724-5, Feist 494.

⁷⁷ WP i, 513, Bois. 766.

⁷⁸ WP i, 726.

⁷⁹ MS 48.

⁸⁰ WP i, 182 s.v. *ōr-*, *or-*, Bois. 72.

⁸¹ WP ii, 676, Feist 445.

⁸² WP ii, 527, s.vv. 1. *syer-* 'speak' and 2. *syer-* 'whisper'.

⁸³ MS 74.

⁸⁴ WP i, 283, Bois. 229.

⁸⁵ WP ii, 313.

⁸⁶ WP i, 823, Feist 554, EM 1088.

⁸⁷ WP i, 142, Bois. 270.

⁸⁸ WP i, 285 s.v. 10. *yer-*, Bois. 297.

⁸⁹ WP i, 142 s.v. 5. *er-*, EM 852.

⁹⁰ WP ii, 356 s.v. *reyos*, Feist 401, EM 879.

⁹¹ Cf. Feist 25 and EM 75, where it is pointed out that there is no trace of dissyllabism of the historical root, and that it is, therefore, independent of, e.g., Lat. *arō* 'plough' and its IE cognates.

⁹² WP ii, 671, Bois. 894, Feist 446, EM 964, where, curiously enough, the structural similarity of *sternō* is called to attention.

⁹³ WP ii, 638, EM 1034 s.v. *terra* and 1021 s.v. *tellūs*.

in Lat. *sternō* 'spread out', Skt. *stṛṇāti* 'strew, spread, extend', and, without *s*-, Lat. *terra* 'earth, land, country', Lat. *telhus* (<*de-éRe*) id., Skt. *tala-* 'plain', Ir. *talam* 'soil'. *pRs* *be-éRe-ge* > IE (s)*perg*-⁹⁴ 'strew, sprinkle' in Lat. *spargō* 'spread, diffuse'; *be-éRe-xe* > IH *pelx-* in Hit. *palhis* 'broad', *palhasti* 'breadth', and, with variant accentuation, *be-eré-xe* > IE *p(e)lā*-⁹⁵ in Lat. *plānus* 'flat', Lith. *plóti* 'flatten, extend', Ir. *lár* 'soil, ground', OE *flór* id., and with *to*-ptc., Gk. *πλάτος* 'width', cf. Skt. *práthas-* id., *prthivī* 'earth'; *de-éRe-xe* > IE (s)*tlā*-⁹⁶ in Lat. *lātus* 'wide', OCS *stblati* 'extend'; *de-ére-ye* > IE (s)*treu*-⁹⁷ in Goth. *straujan* 'spread, extend'. *Rs* + *R* 'ere-'e + *deye* > IE (e)*rēdh*-⁹⁸ 'separate, divide' in Lith. *ardýti* id., OCS *rědsko* 'seldom'.

13. 'ere (C) 'be or set in motion, run, flow (of water)'. *R* IH 'er-, IE *er*-⁹⁹ in Hit. *er-*, *ar-* 'arrive', Skt. *ṛṇóti* 'be in motion, rise', Lat. *orior* 'rise', Gk. *ὄρνυμι* id., Goth. *runs* 'course, run'. *Ri* 'e-sé-re > IH, IE *ser*-¹⁰⁰ 'be in swift motion, stream' in Skt. *sarati* 'runs', Lat. *serum* 'whey, serum', and prob. Hit. *sarā* 'up' and *ser* 'above'. *Rs* 'ere-se > IH 'er(e)s-, IE (e)*r(e)s*-¹⁰¹ 'be in motion, flow' in Hit. *ars*- 'flow', Lat. *errō* 'wander, go astray, err', Arm. *eram* 'be in restless motion', Goth. *arzeis* 'erring, deceived', Gk. *ἀλάομαι* (<'eRe-se) 'wander about'; 'eRe-xe > IH *lax-* in Hit. *lahhi-lahheske-* 'drive horses', *lahha-* 'campaign, drive', IE (e)*lā*-¹⁰² 'drive, set in motion' in Gk. *ἐλάω* 'drive', Lat. *alacer* 'lively, eager', Goth. *aljan* 'be eager'. *pR* *be-éRe* and *pe-éRe* > IE (s)*p(h)er*-¹⁰³ 'twitch, tremble, jerk; beat with the foot, hasten, struggle,' in Hit. *isparra-* 'spread, trample' (SHG § 127), Skt. *sphurāti* 'tremble, throb, quiver, spurn', Gk. *σπείρω* 'quiver, palpitate, hesitate', Lat. *spernō* 'scorn, reject, spurn', and, without *s*-, Gk. *πάλλω* 'shake, agitate', Lat. *pellō* 'drive, push', Gk. *πόλεμος* 'war'; *de-éRe* > IH, IE *ter*-¹⁰⁴ in Hit. *tarra-* 'tremble'(?), Skt. *tarala-* 'trembling', Alb. *tartalis* 'tremble, writhe, struggle'. *pRs* *be-éRe-ge* and *pe-éRe-ge* > IE (s)*p(h)er(e)g*-¹⁰⁵ with meanings 'hasten, twitch, frighten' in Toch. A and B *pārsk-*, *prāsk-* (< **prk-sk-*) 'be afraid', Goth. *faúrhts* 'frightful', Skt. *sphúrjati* 'burst forth, appear; rumble, crash, roar', Gk. *σφαργέομαι* 'burst with a noise, crack'; *be-éRe-se* > IH *pers-* in Hit. *pars-* 'flee'; *de-éRe-pe* > IE *t(e)rep*-¹⁰⁶ 'trip, trample' in Gk. *τραπέω* 'tread grapes', Skt. *tṛprá-* 'restless, agitated', Lat. *trepidus* id.; *de-éRe-me* > IE *t(e)rem*-¹⁰⁷ 'trip, tremble' in Gk. *τρέμω* 'tremble', Lat. *tremō* id., Alb. *trëmp* 'be afraid', Toch. *trām* 'tremble';

⁹⁴ EM 959, cf. also Bois. 927 s.v. *σφαργείσθαι*.

⁹⁵ EM 776, Bois. 792.

⁹⁶ Cf. EM 974 and 523.

⁹⁷ Feist 456, EM 989.

⁹⁸ Cf. WP i, 143 s.v. *erdh-*.

⁹⁹ WP i, 136 s.v. 3. *er-*, Couv. 93-93, Feist 401, Bois. 714, EM 712.

¹⁰⁰ WP ii, 497 s.v. 1. *ser-*, EM 932.

¹⁰¹ WP i, 149 s.v. *eras-*, *ers-*, *ras-*, WH i, 416.

¹⁰² WP i, 155, Bois. 239, WH i, 25, Feist 33.

¹⁰³ WP ii, 668 s.v. 1. *sp(h)er-*, and II, 52 s.v. 4. *pel-*, Bois. 833, EM 934, also Bois. 744 s.v. *πάλλω*, and EM 750 s.v. *pellō*.

¹⁰⁴ WP i, 727 s.v. 1. *ter-*, esp. as base for such sequences as *tr-em-*, *tr-ep-*, *tr-es-*, q.v.

¹⁰⁵ WP ii, 671 s.v. *sp(h)er(e)g-* and ii, 48 s.v. 2. *perg-*, SSS 450, Feist 146, Bois. 927.

¹⁰⁶ WP i, 756 s.v. 1 *trep-*, Bois. 979, EM 1054.

¹⁰⁷ WP i, 758 s.v. *trem-*, Bois. 982, Feist 501, EM 1054, SSS 442.

de-ere-se > IE *l(e)r(e)s*-¹⁰⁸ 'tremble' in Skt. *trásati* 'tremble', Gk. *τρέω* 'tremble with fear, tremble at, flee', Lat. *terreō*¹⁰⁹ 'make tremble, frighten, terrify'. *R + R 'ere + geyē* > IE *ergh*-¹¹⁰ 'shake, excite, tremble' in Skt. *ṛghāyāti* 'tremble', Gk. *ὀρχέμαι* 'dance'. *pR + R be-'ere + geyē* > IE *(s)pergh*-¹¹¹ 'hasten, speed' in Skt. *spṛhayati* 'desire', Gk. *σπέρχω* 'press, drive'; *be/pe-'ere + deye* > IE *(s)p(h)er(e)dh*-¹¹² 'move convulsively, jerk' in Hit. *ispart* 'arise, come out, escape', Skt. *spārdhate* 'race, contend', Gk. *σπυρθίζειν* 'be in violent motion, spring up', Goth. *spaurds* 'course, track, arena'.

14. *'eRe* (A) 'wet, stream, pour, bathe'. *R IH 'er-* in Hit. *arr-* 'wash', Toch. A *yār, yār* 'bathe, cleanse'. *Rs 'ere-de* > IE *erd*-¹¹³ in Skt. *árdati* 'run, flow', Gk. *ἄρδω* 'wet, water'. *Ri 'e-ye-re* > IE *ey(e)r*-¹¹⁴ 'wet' in Gk. *οὐέω* 'pass water', Lat. *ūrīna* 'urine', Toch. A *wār* 'water'; *'e-se-le* > IE *sel*-¹¹⁵ 'swamp, lake' in Skt. *sáras-* 'lake', Gk. *ἔλος* 'marsh'. *Rs 'e-yé-Re-se* > IE *yers*-¹¹⁶ in Skt. *varṣá-* 'rain', Gk. *ἔρση* 'dew'. *pR be-'éle* > IE *pel-* 'flow, wet; swamp', cf. § 13.2a; *de-'éle* > IE *(s)tel-* 'drip, pass water', cf. § 13.2b; *ge-'éle* > IE *kēl-* 'damp', cf. § 13.2c; *syē-'éle* ('self-water') > IE *syel*-¹¹⁷ 'swallow, gulp' in Avest. *x^var-* 'consume, enjoy', NE *swill*. *pRs be-'ele-de* > IE *p(e)led*-¹¹⁸ 'wet, run, swim' in Gk. *πλάδω* 'wetness', Lett. *peldu* 'swim, bathe'; *be-'éRe-se* > IE *pers*-¹¹⁹ 'squirt, splash' in Skt. *pṛṣat* 'drop', *parṣate* 'become wet' (lex.), OIc. *fors* 'waterfall'; *ge-'elé-pe* > IE *klep-* 'damp', cf. § 13.2c; *ge-'elé-ke* > IE *kēq-* 'damp', cf. § 13.2c, and *(s)kleq-* 'wet, sprinkle' in Lith. *šlakù* 'drop, drip', OIc. *slag* 'wet (of rain)'; *ge-'eRē-se* > IE *kres*-¹²⁰ 'flowing water, fountain' in Gk. *κρήνη* 'fountain', OIc. *hrōnn* 'wave'. *R + R 'elé + yege* > IH *'leyy-* > Hit. *lāhw-* 'pour', and with var. acc. *'ele + yéye* > IE *leu*-¹²¹ in Gk. *λοῖω* 'wash, bathe', Lat. *lavō* id. *pR + R be-'ele + yege* > IE *pleu-* 'float' in Skt. *plāvate* 'float, swim', Toch. B *plewe* 'ship', and cf. § 13.2a; *ge-'ele + yege* > IE *kēu*-¹²² 'wash, purify' in OLat. *cluō* 'purgo', and Gk. *κλίζω* 'lave, cleanse'.

15. *'eRe* (B) 'be motionless, rest'. *R IE el*-¹²³ in Gk. *ἐλνύω* 'remain motionless or inactive', Skt. *ilāyati* 'stand still, come to rest', Goth. *af-linnan* (< *'elē*) 'leave off, cease, rest', and prob. Lith. *alsd* 'tiredness'. *Rs 'eRē-e* > IE *(e)rē*-¹²⁴ 'rest'

¹⁰⁸ WP i, 760 s.v. *tres-*, Bois. 984.

¹⁰⁹ EM 1035, where connection with *tremō* is suggested.

¹¹⁰ Bois. 287, 720.

¹¹¹ WP ii, 675, Bois. 895.

¹¹² WP ii, 675, Feist 444.

¹¹³ WP i, 139, Bois. 76.

¹¹⁴ WP i, 268 s.v. 3 *yer-*, EM 1137, Bois. 729, SSS § 44 e.

¹¹⁵ WP ii, 507 s.v. *selos-*, Bois. 246.

¹¹⁶ Bois. 729.

¹¹⁷ WP ii, 530 s.v. 1 *syel-*.

¹¹⁸ WP ii, 66, Bois. 789.

¹¹⁹ WP ii, 50.

¹²⁰ WP i, 488 s.v. *kros-no-*, Bois. 515.

¹²¹ WP ii, 441 s.v. *lou-*, Bois. 587, WH i, 773. Couv. 189-94.

¹²² WP i, 495, WH i, 239, Bois. 473.

¹²³ WP i, 152, Bois. 243, Feist 8.

¹²⁴ WP i, 144 s.v. 1. *erē-*, *rē-*, Bois. 233.

in Gk. ἐρωή 'rest, cessation', OHG *ruowa* 'rest, resting-place', *rāwa* 'rest'; *eRe-me* > *rem*-¹²⁵ 'rest, support oneself on' in Skt. *rámate* 'stand, still, rest', Gk. ἡρέμα 'quietly, peacefully', Goth. *rimis* 'rest'; *eRe-se* > IE *res*-¹²⁶ 'rest, repose' in Goth. *rasta* id., NE *rest*. *pR de-éle* > IE *tel*-¹²⁷ 'be quiet' in Lith. *tūli* 'become quiet', OIr. *tuilid* 'sleeps'.

16. *eRe* (C) 'pole, shaft, oar'. R IE *er*-¹²⁸ 'oar; row' in Gk. ἐρέτης 'oar', ἐρέσω 'row', Skt. *āri-tra-* 'rudder', Lith. *irti* 'row'. Rs *'ere-e* > IE (e)*rē*-¹²⁸ 'oar' in Lat. *rēmūs* 'oar', Skt. *arī-tra-* id. *pR be-éle* > (s)*per*-¹²⁹ 'pole, spar, spear' in Lat. *sparus* 'short spear', OHG *sper* id., OHG *sparro* 'pole, beam'; *ge-éRe* > IE *kel*-¹³⁰ 'shaft, stiff blade or stalk' in Skt. *śāld-* 'stick, staff', Gk. κήλον 'shaft'. *pRs be-éle-ge* > IE *preg*-¹³¹ 'pole' in OIc. *frakka* 'throwing spear', and, with var. acc., *be-éle-ge* > IE *perg-* 'pole, beam' in OE *fercal* 'bar, bolt', OCS *praga* 'sill, threshold, beam'.

17. *'eje* 'go, come'. R IH *'ei/ye-* in Hit. (i)*ya-* 'go', *we/a-* 'come', IE *ei*-¹³² 'go, come', Toch. *i*, *yā* id. R *'e-mé-je* > IE *mei*-¹³³ 'go, wander' in Lat. *meō* id., Pol. *mijać* 'pass by, avoid'; *'e-ye-je* > IE *yei*-¹³⁴ 'go, go after' in Lat. *via* 'way, road', Gk. *iei* 'tend to, seek to, hasten', Skt. *vēti* 'seek to, attain', Lith. *vejū* 'hunt, pursue'. Rs *'éje-se* > IE *eis*-¹³⁵ 'be or set in quick motion' in Skt. *iṣyā-ti*, *iṣṇāti* 'set in motion, hasten', OIc. *eisa* 'be in rapid forward motion', Gk. *laivō* 'revive, exhilarate', Lat. *ira* 'anger'; for the suffixes *me-*, *ye-*, *le-*, etc., s.v. *ei-* in WP i, 102. *pR be-éje* > IH *pei*-¹³⁶ in Hit. *pai-*, *piya-* 'go'; *ké-éje* > IE *qēi*-¹³⁷ 'be or set in motion' in Gk. *κίω*, *κίτνυμαι*, Lat. *ciō* 'set in motion'. *pRs ké-éje + se*, *de*, *le*, etc., s.v. IE *qēi-*. *pRi(s) de-e-ye-je(-se)* > IE *tuei(s)*-¹³⁸ 'move hither and thither' in Gk. *σείω* 'shake, move to and fro', Skt. *twiṣ-* 'be in violent motion'. R⁺ + R *'e-ré-je + deye* > IE *reidh*-¹³⁹ 'be in swift motion, ride' in OIr. *riad* 'ride', OIc. *reið* id., Goth. *raidjan* 'direct'. R + R *'éje + deye* > IE *eidh*-¹⁴⁰ in Gk. *ίθμα* 'movement, march', OCS *idō* 'go'; *'éje + ge:re* > IE *eigh*-¹⁴¹ in Gk. *οἶχομαι* 'be gone', Lith. *eigà* 'course'.

18. *'eye* 'push, beat, press'. R IE *eu-* in Toch. A *o*-¹⁴² 'hit'. *pR be-éue* > IE *peu*-¹⁴³ 'beat, strike, hack' in Gk. *παίω* 'strike', Lat. *paviō* 'strike, beat'; *de-éue* >

¹²⁵ WP ii, 371, Bois. 328, Feist 398.

¹²⁶ WP i, 144 s.v. 2. *erē-*, Feist 394.

¹²⁷ WP i, 740.

¹²⁸ WP i, 143 s.v. 1. *erē-*, Bois. 275, EM 859.

¹²⁹ WP ii, 665, EM 960.

¹³⁰ WP i, 431, Bois. 448.

¹³¹ WP ii, 48.

¹³² WP i, 102, SSS 423, 458.

¹³³ WP ii, 241, s.v. 3. *mei-*, WH ii, 73.

¹³⁴ WP i, 228, Bois. 367. MS 73 regards this root as a *pR*.

¹³⁵ WP i, 106 s.v. 1. *eis-*, WH i, 717, Bois. 362.

¹³⁶ Cf. MS 62.

¹³⁷ WP i, 361, WH i, 213, Bois. 462.

¹³⁸ WP i, 748.

¹³⁹ WP ii, 348, Feist 393.

¹⁴⁰ WP i, 103, Bois. 369.

¹⁴¹ WP i, 104, Bois. 694.

¹⁴² SSS 425.

¹⁴³ WP ii, 12, s.v. *pēu-*: *peu-*: *pū-*; cf. EM 743, Bois. 740; the difficulties raised in these passages are easily removed by the application of the principle of the alternation *i-/y-*.

IE (s) *teu*¹⁴⁴ 'push, beat', as base for the extensions, s.v. pRs; *ge-éye* > IE *keu*¹⁴⁵, (s) *keu* 'push, throw, shoot' on Lith *šauju* 'shoot', OCS *sujo* 'push', shove, OIc. *skjóta* 'hurl, shoot', OE *scéolan* 'throw, shoot, beat, shove'. pRs *be-éyede* > IE (s) *peud*¹⁴⁶ in Lat. *pudet* 'shame', Lith. *spaudžiù* 'press'; *de-éye-ke* > IE (s) *teug*¹⁴⁷ in Gk. *τύκος* 'hammer', OHG *duhen* 'push, press'; *de-éye-ge* > IE (s) *teug*¹⁴⁴ in Skt. *tuñjātī* 'push, prick, injure', OIc. *þoka* 'move', Ir. *tuag* 'axe'; *de-éye-de* > IE (s) *teud*¹⁴⁸ in Skt. *tuddāti*, *tundate* 'push, prick, injure', Lat. *tundo* 'push, beat', Lat. *studeō* 'apply oneself to, have desire or taste for', Goth. *stautan* 'push, injure'; *de-éye-pe* > IE (s) *teup*¹⁴⁹ in Gk. *τύπρω* 'beat', Lat. *stupeō* 'be struck senseless, be astounded', OCS *tsati* 'palpitare'. pR's *de-e-ré-ye-de* > IE *treud*¹⁵⁰ 'squeeze, press, push' in lat. *trūdō* 'push, shove', Goth. *us-þriutan* 'importune, trouble'. R + R *'eye* + *deye* > IE (e) *qedh*¹⁵¹ 'push, shove, beat, strike' in Skt. *vadh-* 'strike, slay', Avest. *vādāya-* 'push, push back', Gk. *ώθεω* 'push, shove'. pR + R *ge-éye* + *beZe* > IE *skeubh*¹⁵² in Goth. *af-skiuban* 'shove away or aside', Lith. *skūbinti* 'hasten'.

19. *'ese* (A) 'be, exist'. R IH *'es-* in Hit. *ēs-* id., IE *es*¹⁵³ id. *'R 'e'ese* > IH *'ēs-* 'sit' in Hit. *ēs*¹⁵⁴ id. *Rⁱ 'e-né-se* > IE *nes*¹⁵⁵ in Toch. A *nas-*, B *nes-* 'be'. pR *ge-ése* > IH *kes-* in Hit. *kis-* 'become'; *se-ése* > IH, IE *ses*¹⁵⁶ 'sleep' in Hit. *ses-*, Skt. *sāsti* id.

20. *'ese* (B) 'mouth'. R not attested. *'R 'e'ese* > IE *ēs*¹⁵⁷ 'mouth' in Skt. *ās-*, Lat. *ōs*, OIc. *óss* id. *Rⁱ 'e-y/ie-se* > IH *'eis-* in Hit. *ais* 'mouth', IE *cus*¹⁵⁸ id. pRⁱ *ge-é-ne-se* > IE *kens*¹⁵⁹ in Skt. *śāmsati* 'recite, praise', Lat. *censeō* 'consider, deem, reckon', OCS *setō* 'inquit'.

21. *'e(e)* 'one, the one'. R IH *'e-* in the Hit. enclitic pronoun *-a-*, and the IE demonstrative particle *e-*¹⁶⁰ *Rⁱ 'e-íe-(e)* > IE rel. pro. *ie-*, *io-*¹⁶¹ in Skt. *yás*, Phryg. *ls*, Gk. *ós*, while the accentual variant *'é-íe-(e)* > IE *ei*¹⁶² 'one' in Skt. *é-ka-*, Avest. *aē-va-*, OLat. *oi-no-*, Goth. *ains* id. pR *ge-é* > IH, IE *ke*¹⁶³ in Hit. *kās*, *kē* 'hie', and the IE demonstrative stem in Lat. *ce-do*, Arm. *sa* 'this'; with deferred total reduction *ge-e* > IH, IE *qe/o-*. pRⁱ *ge-é-íe* > IH, IE

¹⁴⁴ WP ii, 615.

¹⁴⁵ WP ii, 553, s.v. (s) *keu*.

¹⁴⁶ WP ii, 659, Bois. 895, EM 820.

¹⁴⁷ Cf. fn. 144 and Bois. 989.

¹⁴⁸ Cf. fn. 144 and Feist 451, EM 1064 and 990.

¹⁴⁹ Cf. fn. 144 and EM 990, Bois. 991.

¹⁵⁰ WP i, 755, EM 1060, Feist 535.

¹⁵¹ WP i, 254 s.v. 1. *qedh-*.

¹⁵² WP ii, 556, Feist 9.

¹⁵³ WP i, 160.

¹⁵⁴ Cf. § 30.2 and fn.

¹⁵⁵ SSS 444.

¹⁵⁶ Cf. Couv. 327.

¹⁵⁷ WP i, 168.

¹⁵⁸ WP i, 168 s.v. *ōus-*.

¹⁵⁹ WP i, 403 WH i, 198.

¹⁶⁰ WP i, 96, Couv. 89, 102.

¹⁶¹ Cf. Couv. 102.

¹⁶² Bois. 692, EM 1128, Feist 24.

¹⁶³ WP i, 452, WH i, 192.

*q²ei*¹⁶⁴ in Hit. *kwis*, Lat. *quis*, etc.; *se-é-ne* > IH, IE *sen*¹⁶⁵ in Hit. *sanas* 'one', Lat. *sim-plex*, etc.

ROOTS WITH INITIAL :

22. *:ebe* 'be or set in motion off or away'. R IE *ab* perhaps in Lat. *ab* 'off, away'.¹⁶⁶ Rs *:ebe-He* > IH *:ap-* in Hit. *appa* 'afterwards, again', IE *ap-*, *apo-*, *po*¹⁶⁷ 'off, away' in Skt. *dpa* 'away, off, back', Gk. *ἀπό* 'from, away from', Goth. *af* id.; *:ebe-Ze* > IE *abh*¹⁶⁸ 'forthwith, straightway' in Gk. *ἄφ'αρ* 'straightway, forthwith, suddenly, quickly', OCS *abije* 'immediately'. p(ʳ)Rs *de-(e):ebe-Ze* > IE *dhābh*¹⁶⁹ 'be (emotionally) carried off or away' in Gk. *θάμβος* 'fright', astonishment, stupor'.

23. *:ede* (A) 'beat, strike'. R not attested. pRⁱ *be-:e-ye-de* > IE *bhaud-* 'beat, shove', cf. § 6.8a. pRs *me-ede-He* > IE *mal*¹⁷⁰ 'hatchet, mallet, striker' in Skt. *matyá-* 'harrow, club', Lat. *mateola* 'kind of mallet', OCS *motyka* 'hoe'. p(ʳ)Rs *be-(e):ede-He* > *bhāt-* 'beat', cf. § 6.8b; *be-(e):ede-Ze* > IE *bhādh-*, cf. § 6.8c. pR's *be-:e-ye-de-He* > IE *bhaut-* 'beat, shove', cf. § 6.8b.

24. *:ede* (B) 'smell, stink'. R *ad-* 'reek, stink; hate, detest', cf. § 25.1c. Rⁱ *:e-je-de* > IE *aid*¹⁷¹ in Gk. *αἰδέω* 'swell, become swollen', OIc. *citr* 'poison, venom', Lat. *aemidum* < **aid(s)mo-do-* 'tumidum'. pRⁱ *be-:e-je-de* > IE *bhaid-* 'foul, disgusting', cf. § 6.9a; *ge-:e-je-de* > IE *ghaid-* 'goat', cf. § 25.1b; *syē-:e-je-de* ('self-stink') > IE *suaid*¹⁷² 'sweat' in Skt. *svidyati*, Lat. *sūdō*, Gk. *ἰδός*, *ἰδῶ* id. p(ʳ)R(s) *be-(e):ede-(Ze)* > IE *bhādh-* 'feel disgust', cf. §§ 6.9c. 25.1a. pR's *be-:e-je-de-Ze* > IE *bhaidh-* 'foul, disgusting', cf. § 6.9c; *be-:e-je-de-He* > IE *bhait-* id., cf. § 6.9b.

25. *:eke* 'bend'. R not attested. Rⁱ *:é-ne-ke* > IE *ank-* 'bend', cf. § 4.1a; *:e-le-ke* > IE (a)*leg*¹⁷³ 'leg, limb' in Gk. *λάξ* 'with the foot', *ἄλαξ-πῆχυς* (Hesych.), Lat. *lacertus* 'upper arm, muscles of the upper arm', Lith. *alkūne* 'elbow'; *:e-ye-ke* > IE *yeq*¹⁷⁴ 'bend' in Skt. *vakrá-* 'bent, crooked', Lat. *con-vexus* 'rounded, arched, vaulted'. p^rRs *be-:e:eke-Ze* > IE *bhāg*¹⁷⁵ 'elbow, forearm' in Gk. *πῆχυς* id., Skt. *bāhū-* 'arm'.

26. *:ege* 'sharp, cut, point, edge'. R IE *ag*¹⁷⁶ in Skt. *āgra-* 'front, beginning, tip, end', Avest. *ayra-* 'first', Lett. *ags* 'early'. Rⁱ *:e-re-ge* > IH *arg-* in Hit. *ark-* 'cut off, cut up, divide'. Rs *:ege-ē* > IE *ak*¹⁷⁷ 'sharp' in Skt. *āśri-* 'edge, corner, cut', Lith. *aštrūs* 'sharp', Gk. *ἄκρος* 'sharp', *ἀκαια* 'spike, prick, goad',

¹⁶⁴ Feist 285, Bois. 972.

¹⁶⁵ WP ii, 488 s.v. 2. *sem-*.

¹⁶⁶ Cf. WH i, 1.

¹⁶⁷ WP i, 47, Bois. 69, Feist 3.

¹⁶⁸ WP i, 52, Bois. 105.

¹⁶⁹ WP i, 824, Bois. 333.

¹⁷⁰ WP ii, 229, WH ii, 49, EM 595.

¹⁷¹ WP i, 166 s.v. *oid-*, WH i, 16, EM 16.

¹⁷² Lit. 'self-stink'. Cf. WP ii, 521 s.v. *syoid-*, Bois. 366.

¹⁷³ WP ii, 420 s.v. *leg-: leg-*, WH i, 743, Bois. 555.

¹⁷⁴ WP i, 246, WH i, 268.

¹⁷⁵ WP ii, 130, Bois. 781.

¹⁷⁶ WP i, 38, EM 29 s.v. *agrippa*.

¹⁷⁷ WP i, 28, WH i, 7, EM 9, Bois. 32, Feist 17.

Arm. *aseln* 'needle', prob. also Lat. *ascia* < **acsia* = Gk. ἀξίνη 'axe'; *εγε-ze* > IE *aq*¹⁷⁸ 'sharp' etc., in Lith. *akstis* 'small pointed stick', *ākstinas* 'goad'; *εγε-Ze* > IE *aq*¹⁷⁹ in Goth. *aqizi* 'ax', OE *ær* id. *Rs* *εγε-ε* > IE *āk* 'sharp' in Lat. *ācer*, Gk. ἄκρς ὄξυ (Hesych.). *Rs* *εγε-ge-ε* > IE *aik*¹⁸⁰ 'spear' in Gk. αἰκλοι αἱ γωνίαι τοῦ βέλους; ἰκτέα ἀκόντιον (Hesych.), αἰχμή (< **aik-smā*-) 'point of lance', OPr. *aysmis* 'lance, javelin'. pR *be-εγε* > IE *bhag*¹⁸¹ 'sharp, cut' in Skt. *bhājati* 'apportion', Cret. φάγ-πος 'whetstone'. p(r)R *de-(ε)εγε* > IE *dhāg*¹⁸² 'sharpen' in Gk. θήγω (Dor. θάγω 'sharpen', Arm. *daku* 'ax'.

27. *ere* 'stand, project; bristle (blade, spike, hair)'. R IH *ar*- prob. in Hit. *ar*- 'stand, take one's stand'. R¹ *εγε-re* > IE *air*¹⁸³ in Skt. *erakā* 'kind of grass', Gk. αἶρα 'darnel, rye-grass'. pR *be-ére* > IE *bhar*¹⁸⁴ 'stand up, point, edge' in Skt. *bhṛṣṭi*- 'point, edge', OIr. *barr* 'point, summit', Lat. *fastigium* 'point, ascent, summit'; cf. also Lat. *far* 'spelt', and Lat. *farfarum* or *farferum* 'coltsfoot'; *ge-ére* > IE *ghar*¹⁸⁵ 'stick forth' in Gk. χάρμη 'point on spear', Welsh *garth* 'promontory', Pol. *grol* 'point on arrow'. pRs *ge-ere-ne* > IE *gharn*¹⁸⁶, *ghren*- in Lat. *granus*, *grana* 'tress, moustache', Goth. **grana* id., Oic. *grøn* id., Mlr. *grend* 'whiskers', Russ. Ch. Sl. *granъ* 'edge, point'; *ge-ere-se* > IE *ghres*¹⁸⁷ in Lat. *grāmen* 'grass', Goth. *gras* id. pR + R *be-ere* + *deye* > IE *bhardh*¹⁸⁸ 'beard' in Lat. *barba*, OHG *bart*, Lett. *bārda*, OCS *brada* id.

28. *ele* 'grow, make to grow, nourish'. R IE *al*¹⁸⁹ in Lat. *al-mus* 'nourishing', *ad-ultus* 'full-grown', *alō* 'nourish', OIr. *alim* id., Goth. *alan* 'grow'. *R* *εele* > IE *āl*¹⁹⁰ 'plant with bulbous roots' in Lat. *ālum* 'symphytum petraeum', *ālium* 'garlic', Skt. *ālu*- 'esculent root' (lex.). *Rs* *εele-de* > IE *ald*¹⁹¹ in Gk. ἀλδαίνω 'make to grow, flourish'; *εRe-se* > IH *ars*- in Hit. *arse*, *arsā(e)*- 'plant'. pR *be-εele* > IE *bhal*¹⁹² in Gk. φύλλον 'leaf', Lat. *folium* id.; *de-εele* > IE *dhal*¹⁹³ in Gk. θάλλω 'blossom, flourish', Arm. *dalar* 'fresh, green'; *tē-cle* > IE *tāl*¹⁹⁴ 'grow, bloom' in Skt. *tāla*- 'palmyra-tree or fan-palm', Gk. τηλεθάω 'be luxurious, abundant', Lat. *tālea* 'slip, cutting, layer'. pR *de-εεele* > IE *dhāl*- in Gk. θηλέω, Dor. θαλέω 'bloom', etc. pRs *be-εele-Ee* > IE *bhlē*¹⁹⁵ 'bloom, flower' in Lat. *flōs*,

¹⁷⁸ Cf. WH i, 7. Feist 17 b, bot.

¹⁷⁹ Feist 54.

¹⁸⁰ WP i, 7, Bois. 31.

¹⁸¹ WP ii, 127, 128, Bois. 1010.

¹⁸² WP i, 823, Bois. 343.

¹⁸³ WP i, 12 s.v. *airā*, Bois. 28.

¹⁸⁴ WP ii, 131 s.v. *bhares*-, WH i, 461, cf. also 455, 457.

¹⁸⁵ WP i, 606 s.v. 3. *gher*-, Bois. 1051, LS 1930.

¹⁸⁶ WH i, 619, Feist 220.

¹⁸⁷ WH i, 616, Feist 220.

¹⁸⁸ WP ii, 135, WH i, 96.

¹⁸⁹ WP i, 86 s.v. 2 *al*-, WH i, 31, EM 37, Feist 34.

¹⁹⁰ WP i, 90, WH i, 33 (where relationship with *alō* is suggested).

¹⁹¹ Bois. 41.

¹⁹² WP ii, 176 s.v. 2 *bhel*-, WH i, 523, Bois. 1041; there is no basis for postulating *e*-vocalism in this root. The Greek and Latin cognates both indicate IE *o*- < *a/o*-alternation.

¹⁹³ WP i, 825, Bois. 332.

¹⁹⁴ WP i, 705, Bois. 939.

¹⁹⁵ The 'set' base of 2 *bhel*-, WP ii, 176; cf. WH i, 518, Feist 103.

Goth. *bloma* id. **R** + **R**:*ele* + *deye* > IE *aldh*-¹⁹⁶ in Skt. *ṛdhnóti* 'thrive, succeed', Gk. *ἄλθομαι* 'grow, be healed'; *:ele* + *beye* > IE *albh*-¹⁹⁷ 'corn, grain' in Gk. *ἄλφισον* 'barley-groats', Alb. *el'p* (*el'bi*) 'barley'.

29. *:eye* (A) 'give'. **R** IE *ai*-¹⁹⁸ in Toch. B *ai-* 'give', Gk. *αἶσα* 'lot, destiny', Osc. *acteis* 'partis'. **pR** *pé:eye*, *be:éie* > IH *pāi- bhai-* in Hit. *pāi* 'gives'.¹⁹⁹

30. *:eye* (B) 'burn, be light'. **R** IH *ai-* in Hit. *ā-* (med. *a-a-ri*, 3 pl. *a-a-an-ta*) 'be hot'; IE *ai*-²⁰⁰ in Skt. *éta-* 'shining, of a variegated colour', Lith. *ai-trūs* 'bitter (burning the mouth)', OCS *jasno* 'clearly', Russ. *jásnyj* 'light, clear', and with *ye*-alternation, Gk. *αῖω* 'get a light, light a fire'. **pR** *ké:eye* > IE *qāi*-²⁰¹ 'heat' in Gk. *καίω* 'burn', fut. *καύσω*, sb. *καύμα* 'burning heat', Lith. *kūlē* 'charcoal (of plants)'; *ge:eye* > IE *q^hhai*-²⁰² 'clear, bright' in Gk. *φαιός* 'grey', *φαικόν* *λαμπρόν* (Hesych.), Lith. *graisas* 'reflected light of a blazing fire'. **pRs** *ge:eye-de* > IE *q^hhaid*-²⁰² 'clear' in Gk. *φαιδρός* 'brilliant, clear', Lith. *gaidrūs* 'clear'. **R** + **R**:*eye* + *deye* > IE *aidh*-²⁰³ 'burn' in Skt. *édha-* 'firewood', Gk. *αἶθω* 'light up, kindle', med. *αἶθομαι* 'burn, blaze', OIr. *aed* 'fire', Lat. *aestus* (< **aidh-tos*) 'heat'.

31. *:eye* 'perceive, perception'. **R** IH *au-* in Hit. *au-* 'see', IE *au*-²⁰⁴ 'see, perceive, understand' in Skt. *dvati* 'notice', Avest. *uši-* 'intelligence, understanding', OCS *umъ* (< **au-mo-*) 'understanding'. (*ṛ*)**R**ⁱ (*ʔe*):*e-ye-ye* > IE *āy-*-²⁰⁵ 'life, long time, eternity' in Skt. *āyus-* 'life, extent of life', *āyú-* 'living', Gk. *αἰών* 'lifetime, eternity', Lat. *aevum* id., Goth. *aiws* 'time', *aiweins* 'eternal', Lat. *ae-tās* 'age', *ae-ternus* 'eternal'. **Rs** *:eye* > IE *āu*-²⁰⁴ in Skt. *āvis*, Avest. *āviš* 'evidently, before the eyes', OCS *javě* 'evidently'. **Rs** *:eye-se* > IH *aus-* in Hit., IE *aus*-²⁰⁴ 'see, perceive', s.v. *au-*; *ye-Re* > IE *uel*-²⁰⁶ 'see' in Lat. *vol-tus* 'expression', Welsh *gweled* 'see', and IE *yer*-²⁰⁷ 'notice, pay heed, see' in Gk. *ὀράω* 'see', Lat. *vereor* 'revere, respect', Goth. *warai* 'sober, serious'. **pR** *ge:eye* > IE *ghau*-²⁰⁸ 'perceive' in Goth. *gaumjan* 'notice', Oic. *gaumr* 'heed, care', Oic. *guma* 'regard'; *né:eye* ('not perceive') > IE *nāu-* 'dead'²⁰⁹ in Goth. *naus* 'corpse', OCS *navъ* id. **p(ṛ)****R** *de-(e):eye* > IE *dhāu*-²¹⁰ in Gk. *θαῦμα* 'wonder, marvel'. **R** + **R**:*eye* + *deye* > IE *audh*-²¹¹ in Lat. *audiō* 'hear', Gk. *αἰσθάνομαι* 'perceive'.

32. *:ese* 'pounce, grasp eagerly; devour (in bird-names)'. **R** > IE *as-* in

¹⁹⁶ Bois. 41.

¹⁹⁷ WP i, 92, Bois. 48.

¹⁹⁸ MS 63, SSS 424, WP i, 2, Bois. 28.

¹⁹⁹ MS 63.

²⁰⁰ WP i, 2 s.v. 3 *āi-*, Bois. 105.

²⁰¹ WP i, 376, Bois. 393; the forms cited exhibit *i-/y-*.

²⁰² WP i, 665, Bois. 1011.

²⁰³ WP i, 4, Bois. 23, WH i, 20.

²⁰⁴ WP i, 17, WH i, 80.

²⁰⁵ WP i, 6, Bois. 31, WH i, 21, Feist 30.

²⁰⁶ WP i, 293, EM 1132, Feist 576.

²⁰⁷ WP i, 284 s.v. 9. *yer-*, EM 1089, Bois. 709, Feist 551.

²⁰⁸ WP i, 635 s.v. *ghou-*, Feist 207.

²⁰⁹ WP ii, 316, Feist 372.

²¹⁰ WP i, 832, Bois. 335; cf. also Feist 153, s.v. *filu-deisei*.

²¹¹ WH i, 80, Bois. 29.

Lat. *os-cen* cf. § 25.3c. *R*ⁱ *ie-je-se* > IE *ais*-²¹² 'desire, want' in Skt. *iṣ'd-* 'wish', Avest. *isa'ti* 'desire, seek', Gk. *ἔμεψς* 'passionate desire'. *pR* *be-ese* > IE *bhas-* 'devour', cf. § 25.3a; *ge-ese* > IE *ghas-* 'eat, devour', cf. § 25.3b. *pR* *be-ēese* > IE *bhās-* 'bird of prey', cf. § 25.3a. *pR*ⁱ *ge-ē-ne-se* > IE *ghans-* 'goose', cf. § 25.3b.

ROOTS WITH INITIAL *x*

33. *xepe* 'fit, contain, hold; touch, grasp' *R* IH *xap-* in Hit. *happ-* 'be joined to'. *R*ⁱ *xe-ye-pe* > IH *xeup*-²¹³ in Hit. *hupp-* 'hold, fasten', Gk. *ἅπτω* 'touch, grasp', and *ἅπας*, later *πᾶς* 'all'; with *-nó-* participle, IH *xupnó-* Hit. *human* 'all', Lat. *omnis* id.; *xe-re-pe* > IH *xarp-* in Hit. *harp-* 'join, cause to unite'. *Rs* *xepe-He* > *aph*-²¹⁴ in Gk. *ἀφάσσω* 'touch, stroke', Arm. *ap* 'palm of the hand'. *pR* *de-xepe* > IH *tap-* in Hit. *dap-īya-* 'all', and prob. IE *tap*-²¹⁵ 'seize closely' in Skt. *tāpati* 'squeeze, press'. *pR*ⁱ *ge-xe-re-pe* > IH *qarp-* in Hit. *karpessar* 'entirety, totality'. *pRs* *ge-xepe-Ze* > IE *qab*-²¹⁶ 'fit well, succeed' in OIr. *cob* 'victory', OCS *kobъ* 'τύχη, genius, protective spirit or deity', OE *gehæp*, NE *happen*.

34. *xete* 'dry, wither, sear'. *R* IH *xat-* in Hit. *hat-* 'dry up, wither'. *R* *xéxete* > IE *āt*-²¹⁷ 'fire, burn, burnt' in Avest. *ātar-* 'fire', Lat. *āter* 'dark, black', Arm. *airem* 'burn, kindle'. *Rs* *xete-He* > IE *ath-* in Skt. *ātharvan-* '(fire) priest', Avest. *aθravan-* id. *R*'s *xe-ne-te-He* > IE *anth*-²¹⁸ in Gk. *ἀνθραξ* 'glowing coal, charcoal, coal'. *pR*'s *ge-xe-ne-te-Ze* > IE (s) *qand*-²¹⁹ 'glow' in Gk. *κάνθαρος* 'ἀνθραξ (Hesych.) Lat. *candēō* 'glow'.

35. *xede* (A) 'point; pierce, split'. *R* unattested. *Rs* *xede-He* > IH *xat-* in Hit. *hatt-* 'pierce'. *R*ⁱ *xe-re-de* > IE *ard-* 'point', cf. § 6.10a. *R*'s *xe-re-de-He* > IE *art-* 'point' etc., cf. § 6.10b; *xe-re-de-Ze* > IE *ardh-* 'lance, spear', cf. § 6.10c. *pR*'s *ke-xe-je-de* > IE (s) *qheid*-²²⁰ 'split' in Skt. *chid-* 'split' (*chindāti*, caus. *chedayati*), Gk. *σχίζω* id., Lat. *scindō* id.

36. *xede* (B) 'motion towards'. *R* IE *ad*-²²¹ 'to, towards, against' in Phryg. *αδ-*, Lat. *ad*, Goth. *at* 'to' etc. *R*ⁱ *xe-ye-de* > IE *ud*-²²² 'to, up (to), out' in Skt. *ud-* 'out', Avest. *us-*, *uz-* (< **ud-s*) id., Cypr. *ὕ* 'επι', Lat. *us-que* 'through and through, from . . . to, all the way', Lith. *už-* 'up, to', OCS *vъz-* 'to, up to, at'. *Rs* *xede-He* > IE *at* ²²³ 'but' (< 'against') in Lat. *at* 'but', Gk. *ἀτ-ἀρ* 'but, nevertheless (marking a strong contrast, i.e., against)', Goth. *ap-pan* id.; *xede-Ze* >

²¹² WP i, 12.

²¹³ Cf. Couv. 144–146.

²¹⁴ Bois. 72.

²¹⁵ WP i, 705.

²¹⁶ WP i, 457, s.v. *qob*-.

²¹⁷ WP i, 46, WH i, 75.

²¹⁸ LS 141.

²¹⁹ WP i, 352, WH i, 51, Bois. 405.

²²⁰ Bois. 933.

²²¹ WP i, 44, WH i, 11, Feist 60.

²²² WP i, 189, Bois. 997, Feist 537.

²²³ WH i, 75, cf. esp. the discussion of the semantics; Feist 63.

IE *adh*²²⁴ in Goth. *and* 'ἐπὶ, κατὰ, διὰ', Arm. *ənd* 'to, on, over', and prob. Skt. *adhi* 'over, beside, on', *ādha* 'then, so'. R's *xe-ne-de-He* > IH *xant-* in Hit. *hant-* 'front', IE *anti*²²⁵ 'against'.

37. *xeke* 'container, vessel'. R IH *xak-* perh. in Hit. *hakkunais* 'vessel for oil'. R¹ *xe-ye-ke* > IE *auk*²²⁶ 'pot, pitcher' in Lat. *aulla*, *olla* id., Goth. *aúhns* 'oven'. R's *xe-ne-ke-ye* > IE *ang*²²⁷ 'pot, pitcher' in Gk. ἄγγος 'vessel, pitcher; basket', OIr. *aigen* 'patena, patella'; *xe-ye-ke-ye* > IE *auqh*²²⁸ in Skt. *ukhá-* 'pot, boiler'. pR¹ *ge-xe-re-ke* > IE *qreq*²²⁹ 'pitcher, pot' in Gk. κρῶσσός (< *κρῶκ-ks) 'pitcher, jug', OHG *kruog* id.

38. *xege* (A) 'pain, shame, distress'. R IE *ag-* 'sin' etc., cf. § 24.1c. R¹ *xe-je-ge* > IE *aig*²³⁰ 'sick' in Lat. *aeger* 'sick', Lett. *īgstu* 'languish', OE *inca* 'trouble'; *xe-le-ge* > IE *aleg*²³¹ 'pain' in Gk. ἄλγος 'pain', ἀλγέω 'feel bodily pain', and, with variant accent (< *xlég-), Gk. λαγινά. δεινά (Hesych.), OIc. *lacr* 'bad'. R¹(s) *xe-ne-ge-ye* > IE *ngy*²³² in Lat. *inguen* 'groin', Gk. ἀήν 'gland'. R's *xe-né-ge-Ze* > IE *neq^uh*²³³ in Gk. νεφρός 'kidney', OLat. *nefrundinēs*, Lanuvian *nebrundinēs* id., OHG *nīoro* id.; *xe-je-ge-Ze* > IE *aig^uh*²³⁴ 'be ashamed' in Gk. αἰσχος (< *aig^uh-sk-) 'shame', Goth. *aiwiski* id.; *xe-re-ge-ye* > IE *arǵh*²³⁵ 'testicle' in Gk. ὀρχίς, Arm. *orjik* id.; *xe-ye-ge-ye* > IE *auǵh*²³⁶ in Skt. *ohati* 'hurt, give pain'. pR *be-xége* and *pé-xege* > IE *pǵ*²³⁷ 'hip, loins' in Skt. *pakṣá-* 'flank, side'. pR¹ *ge-xe-re-ge* > IE *qreq*²³⁸ 'give pain' in Skt. *karjati* 'pain, make uneasy' (lex.), *kṛcchrá-* 'distressful, troublesome', OIc. *hrekja* 'torment'. pRs *be-xege-Ze* > IE *paq^uh-* 'be anxious, tremble', cf. § 24.1a; *ge-xege-He* > IE *qak-* 'male organ', cf. § 24.1a; *né-xege-Ze* ('not pain or shame') > IE *nāq^uh*²³⁹ 'modest, calm, gay' in Gk. νήφω 'be sober', Ir. *nár* 'modest' (< *nāgro-).

39. *xege* (B) 'neck, narrow' (prob. connected with the preceding root). R unattested. R's *xe-ye-ge-Ze* > IE *auqh*²⁴⁰ 'neck' in Gk. ἀυχήν 'throat'; *xe-ne-ge-ye* > IE *anǵh*²⁴¹ 'narrow, compress' in Gk. ἄγχω 'press, squeeze, throttle', Lat. *angō* id., Skt. *anḥu-* 'narrow', OIr. *cum-ung* id. pR(s) *de-xege(-He)* > IE

²²⁴ Feist 46, where the connexion with Hit. *anda* is quite inadmissible semantically as well as phonologically.

²²⁵ WP i, 65, Couv. 110, WH i, 43, Bois. 64, Feist 46.

²²⁶ WP i, 24, Feist 65.

²²⁷ WP i, 38, s.v. *agen-*: *ang-*, Bois. 6.

²²⁸ WP i, 24, cf. also WH i, 84, s.v. *aulla*, *olla*.

²²⁹ WP i, 487, 594, Bois. 523.

²³⁰ WP i, 9, WH i, 16.

²³¹ Cf. Bois. 42.

²³² WP i, 133, WH i, 701, Bois. 12.

²³³ EM 663, Bois. 666.

²³⁴ WP i, 7, Bois. 30, Feist 30 (q.v. for Low Gmc. forms without the extension exhibited in Greek and Gothic).

²³⁵ WP i, 182 s.v. *orǵh-*, Bois. 721.

²³⁶ Monier-Williams 220.

²³⁷ WP ii, 3.

²³⁸ WP i, 484.

²³⁹ WP ii, 317, Bois. 670.

²⁴⁰ WP i, 25, Bois. 104.

²⁴¹ WP i, 62, WH i, 47, Bois. 10, Feist 13.

tag/k.-²⁴² in OIr. *tachtaim* 'choke, suffocate', Welsh *tagu* 'throttle, strangle', and Lat. *taceō* 'be silent', Goth. *þahan* id.

40. *rege* (C) 'bind; promise'. R IH *xag-* in Hit. *hamenk*.-²⁴³ 'bind, promise'. Rⁱ *xe-sé-ge* > IE *seg*.-²⁴⁴ 'bind' in Skt. *sájati*, *sañjayati* 'fasten; cling, adhere', Lith. *segù* 'bind'. R's *xe-sé-ge-ye* > IE *segh*.-²⁴⁵ 'hold, hold fast, be able (to), be powerful' in Skt. *sáhate* 'overpower, be victorious', Gk. *ἔχω* 'hold, possess, have', Goth. *sigis* 'victory', and, with deferred total reduction, *xe-sé-ge-ye* > IE *seq²⁴⁶h*.-²⁴⁶ in Skt. *saghnóti* 'support, bear; take upon oneself', Gk. *σθένος* 'strength'. p(r)R *de-(xe)xege* > IH, IE *tag*.-²⁴⁷ in Hit. *tamenk*- 'attach oneself to', Gk. *τάσσω* 'fix, determine; station, appoint, assign', Lith. *pa-logùs* 'suitable, convenient'. p(r)R(s) *be-(xe)xege(-'e)* > IE *pāg-/pāk*.-²⁴⁸ 'fix, fasten' in Skt. *pās-* (caus. *pāsayati*; lex.) 'fasten, bind', Lat. *pācīscor* 'bind oneself, agree', Goth. *fahan* 'fasten on, take hold of', Gk. *πῆγνυμι* 'fix, fasten', Lat. *pangō* 'make fast'.

41. *xene* 'draw or drain (water)'. R IH *xan-* in Hit. *hān-* 'draw, drip' and perh. *hānes(s)as* 'vessel for liquids'. Rⁱ *xe-yé-ne* > IH *xuēn*- fully reduplicated in Hit. *hunhwessar* (< **xuēn-xuēn-sar*) 'flood, wave'. pR *be-xéne* > IE *pan*.-²⁴⁹ 'swamp, mire' in Goth. *fani* 'mire', OE *fen(n)* id. pRⁱ *ge-xe-lé-ne* > IE *glen*.-²⁵⁰ 'wetness' in Lith. *klānas* 'pool, puddle', OIc. *hlanda* id. pRs *be-xene-ke* > IE *panq*.-²⁵¹ in Skt. *pānka*- 'mire, swamp', OHG *fūhti* = OE *fūht* = NHG *feucht* 'damp, wet'.

42. *xere* 'plough', etc. R IH *xar-* in Hit. *harra-* 'pulverize, break'. R(s) *xere(-Ae)* > IE *ar(ā)*.-²⁵² 'plough'. Rs *xére-se* > IH *xars*.-²⁵³ in Hit. *hars-* 'spade, harrow'. Rⁱ *xe-sé-re* > IE *ser*.-²⁵⁴ 'sickle, hook' in Gk. *ἄρπη* 'scythe, sickle', Lat. *sariō* 'weed'. R's *xe-sé-re-pe* > IE *serp-* in Lat. *sarpō* 'prune (vines)'.²⁵¹ pR *de-xere* > IE *tar*.-²⁵⁵ perh. in MIr. *tuirenn* (< **tor-iana-*) 'wheat'. pRs *ge-xére-se* > IH, IE *qars*.-²⁵⁶ 'cut, scratch' in Hit. *kars-* 'cut', Skt. *kārṣati* 'plough'.

43. *xeye* (A) 'blow'. R IH, IE *xyc*.-²⁵⁷ in Hit. *hwa-ntas* 'wind', Toch. A *want*, *wānt*, B *yente*, Lat. *ventus*, Goth. *winds* id. R(s) *xeye(-Ēe)* > IE *uē*.-²⁵⁸ 'blow'

²⁴² Feist 487.

²⁴³ Like the precisely identical *tamenk*-, which also belongs to this root; -*men*- must be a local type of infixation.

²⁴⁴ WP ii, 480.

²⁴⁵ WP ii, 481, Bois. 302, Feist 419.

²⁴⁶ WP ii, 482, Bois. 862.

²⁴⁷ WP i, 704, Bois. 944.

²⁴⁸ WP ii, 2, Bois. 777, EM 721, Feist 134. There is no evidence for *g*- in this root, especially since the Balto-Slavic cognates alleged for it are semantically unsatisfactory.

²⁴⁹ WP ii, 5, Feist 142.

²⁵⁰ WP i, 500.

²⁵¹ Cf. Feist 142 s.v. *fani*.

²⁵² WP i, 78.

²⁵³ Cf. Pedersen, *Hitt.* p. 177.

²⁵⁴ WP ii, 500, EM 896, Bois. 81.

²⁵⁵ WP i, 744 s.v. *torjānā*.

²⁵⁶ WP i, 355, see also 2. *qers*-, i, 429, 'draw furrows, plough up'; cf. SHG 137, Couv. 325.

²⁵⁷ EM 1086, Feist 586, Couv. 119, SSS 51.

²⁵⁸ WP i, 220, Bois. 17.

in Skt. *vāti* 'blow', Gk. *ἄημι* id.; Rs *xéye-Re* > IE *aur*-²⁵⁹ in Gk. *αὔρα*, Lat. *aura* 'breeze', Lith *óras* 'air, the open, weather', and also Gk. *ἄελλα* 'tempest, storm'. pR¹ *be-xe-ne-ye* > IE *pneŷ*-²⁶⁰ 'pant, breathe, blow' in Gk. *πνέω* 'blow, breathe', OHG *fnehan* 'breathe, snort'.

44. *xeye* (B) 'draw, pull (away)'. R IE *au*-²⁶¹ 'off, away' in Skt. *ava*- id., Gk. *αῖ-*, Lat. *au-* (in *au-ferō*) id. Rs *xeye-se* > IE *aus*- 'draw, drain', cf. § 24.3d; *xeye-je* > IE *yi*-²⁶² 'apart' in Skt. *vi-* 'apart', Gk. *ἴδιος* 'privatus'. pRs *be-xeye-se* > IE *paus*- 'leave off, cease, come to an end', cf. § 24.3a; *dé-xeye-se* > IH *taxus*- in Hit. *tahh(u)s*-, *tuhhs*- 'take off, take away', cf. § 24.3b; *ge-xeye-se* > IE *gaus*- 'draw lots', cf. § 24.3c.

ROOTS WITH INITIAL *y*

45. *yebe* 'dig, hollow out'. R unattested. R¹ *ye-re-be* > IE *er(e)b*-²⁶³ 'bore, hollow out; sharp implement therefor' in Lith. *urbinti* 'make a hole with an awl', *ruōbti* 'hollow out', Lett. *īrbs* 'knitting-needle'. pR¹ *de-ye-ye-be* > IE *dheub*-²⁶⁴ 'deep, hollow' in Gk. *βόσπος* 'pit, hole, trench', Goth. *diups* 'deep', Lith. *dubūs* 'deep, hollow', OCS *dǫbrŭ* 'gorge, ravine, valley'. pR¹s *de-ye-be-He* > IE *dheup*-²⁶⁴ 'deep, hollow' in MHG *tobel* 'gorge, ravine', OCS *dupina* 'hollow', NBg *dúпка* 'hole'; *de-ye-ne-be-Ze* > IE *dhembh*-²⁶⁵ 'dig, hollow out' in Gk. *θίπτω* 'bury', Arm. *damban* 'sepulchre'; *de-ye-le-be-Ze* > IE *dhelbh*-²⁶⁶ 'dig, hollow out' in OHG *bi-telban* 'bury', OE *delfan* 'dig, bury', OCS **dǫlb-* in Russ. *dolbitʹ* 'chisel, chisel out a hole'.

46. *yede* 'bind, knot'. R unattested. R¹(s) *ye-ne-de(-Ze)* > IE *ned(h)*-²⁶⁷ 'twist together, knot' in Skt. *náhyati* (< **nadh-*, cf. ptc. *naddhá-*) 'bind, join', Lat. *nectō* (on analogy of *plectō*) 'bind, entwine', *nōdus* 'knot', OIr. *naid* 'bond', *nascim* 'bind', Goth. *nati* 'net'. Rs *yedē-Ee* > IE *dē*-²⁶⁸ 'bind' in Skt. *dā-* (ptc. *ditā-*), Gk. *δέω* id. R¹s *ye-ne-de-He* > IE *ent*-²⁶⁹ 'bind together, weave' in Skt. *átka-* 'garment', Gk. *ἄτρουαι* 'warp a woof', Alb. *ent* 'weave, plait'; *ye-yé-de-Ze* > IE *yedh*-²⁷⁰ 'bind, knot' in Gk. *ἐθμοί· δεσμοί· πλόκαμοι* (Hesych.), Goth. *ga-widan* 'bind (up)', OHG *wetan* 'bind'. pR¹s *be-ye-ne-de-Ze* > IE *bhendh-* 'bind'²⁷¹ in Skt. *badhnāti*, *bandhati* 'bind', Goth. *bindan* id.; *ge-ye-re-de-Ze* > IE *gherdh*-²⁷² 'weave, plait, wind' in Goth. *bi-gairdan* 'gird about, girdle', OIc. *gyrða*, NE *gird*.

²⁵⁹ Bois. 102.

²⁶⁰ WP ii, 85, Bois. 798.

²⁶¹ WP i, 13, WH i, 79, EM 1078.

²⁶² WP i, 312, Bois. 366.

²⁶³ WP i, 146, and cf. Bois. 74.

²⁶⁴ WP i, 847, Feist 121.

²⁶⁵ WP i, 852, Bois. 334.

²⁶⁶ WP i, 866.

²⁶⁷ WP ii, 328, EM 662, Feist 371.

²⁶⁸ WP i, 771, Bois. 180 (but Lat. *redimiō* suggested here is better analyzed as *red-imīō*; cf. WP i, 207).

²⁶⁹ WP i, 134.

²⁷⁰ WP i, 256, Feist 211.

²⁷¹ WP ii, 152, Feist 93.

²⁷² WP i, 608, Feist 90.

47. *yege* 'burn'. R IE *eg*-²⁷³ in Skt. *agní*- 'fire', Lat. *ignis*, OCS *ognъ*, Lith. *ugñis* id. R *ye-ne-ge* > IE *eng*-²⁷⁴ in Skt. *āṅgāra*- 'coal', *āṅgārīta*- 'charred, roasted, burnt'. pR *té-yege* > IE *tēg*-²⁷⁵ 'burn' in Gk. *τήγανον* 'frying-pan', OE *þeccan* 'burn'. p(ʳ)R *be-(ye)yege* > IE *bhēg*-²⁷⁶ 'bake, roast' in Gk. *φάγω* 'roast, toast, parch', OHG *bahhan*, OE *bacan*, NE *bake*. pRⁱ *be-ye-le-ge*-²⁷⁷ > IE *bhleg*- in Gk. *θλέγω* 'burn', Lat. *flagrō* 'burn, be afire', *fulgeō* light, lighten, flash', Skt. *bhārga*- 'brilliance, lustre, splendour'. pRs *be-yege-He* > IE *bhek*-²⁷⁸ 'burn' in Lat. *focus* 'fire-place, hearth', Arm. *boç* 'flame'; *de-yege-Ze* > IE *dhegʷh*-²⁷⁹ 'burn' in Skt. *dāhati* 'burn', Lat. *foveō* 'warm, make warm', *favilla* 'ash', Lith. *degù* 'burn'. pR's *ge-ye-je-ge-ue* > IE *qʷheigʷ*-²⁸⁰ 'burn' in Gk. *θιβρός* 'burning, hot', Slov. *žigra* 'German tinder, fire-flint', and perhaps also Gk. *φῶιβος* 'brilliant', as an epithet of Apollo; *se-ye-ne-ge-xe* > IE *senq*-²⁸¹ 'burn, singe' in OE *sengan*, NE *singe*.

48. *yene* 'strike, slay'. R in IE *en*-, cf. § 18.2d. pR *be-yene* > IE *bhen*- 'beat, wound', cf. § 18.2a; *de-yene* > IE *dhen*- 'beat, push', cf. § 18.2b; *ge-yene* > IH *qʷhen*- 'slay', cf. § 18.2c. R + R *yené-ge'e* > IE *nek*-²⁸² 'kill' in Skt. *nāśyati* 'perish, disappear', Gk. *νέκῡς* 'corpse', Lat. *nex* 'death'; *yéne-ge'e* > IH *yenk*- in Hit. *henkan* 'death', OIr. *éc* id.

49. *yere* 'hold, grasp'. R(s) *yere(ke)* > IH *yer(k)*-²⁸³ in Hit. *har(k)*- 'have'. Rs *yeré-pe* > IE *rep*-²⁸⁴ 'snatch' in Lat. *rapio* 'take by force', OLith. *ap-repti* id., Alb. *rjep* 'rob'. Rⁱ *ye-yé-re* > IE *yer*-²⁸⁵ 'take, seize, find' in Gk. *εὕρισκω* 'find', Arm. *gerem* 'take, seize'. pR *be-yere* > IE *bher*- 'carry, bring' in Toch. A, B *pär* id., cf. § 18.1a; *pé-yere(ke)* > IH *peyerk*- 'carry' in Hit. *pēharzi* 'carry'; *de-yere* > IE *dher*- 'hold', cf. § 18.1b; *ge-yere* > IE *gher*- 'grasp, seize', and perhaps *gher*- 'want', cf. § 18.1c. pRⁱ *ge-ye-se-re* > IH *ghesr*-²⁸⁶ 'hand' in Hit. *kessar* id., perhaps also the origin of some of the Gk. dialect-forms cognate with Att. *χείρ* 'hand'. pRs *de-yere-xe* > IH *dyerx*- in Hit. *tarhh*- 'be powerful, control, conquer'. pR + R *be-yere-geye* > IH *byergy*- in Hit. *parkus* 'high', IE *bhergh*-²⁸⁷ in Skt. *bṛhánt*- 'high', Arm. *barjr* 'high, lofty, elevated', Goth. *batrgahei* 'hilly region'.

²⁷³ WP i, 323, s.v. *ngni*-s, EM 473, WH i, 676 (q.v. for the evidence against assumption of an IE *ngnis*).

²⁷⁴ WP i, 181, s.v. *ong*-, Grassmann 14.

²⁷⁵ WP i, 717, Bois. 936.

²⁷⁶ WP ii, 187 s.v. *bhōgō*.

²⁷⁷ Bois. 1029, WH i, 510.

²⁷⁸ WP ii, 186 s.v. *bhok*-, WH i, 521.

²⁷⁹ WP i, 849, WH i, 466.

²⁸⁰ Cf. Bois. 346, 1032.

²⁸¹ WP ii, 495.

²⁸² WP ii, 326; Couv. 122-37 connects the Hittite word with IE *aig*:- *ing*- 'sick', etc., but this is semantically, as also phonologically, unsatisfactory. Again, since the Hittite word always has the meaning of 'death; pestilence', it seems quite unlikely that it belongs to the verbal root *henk*- 'fix, assign, devote, fasten (a door)'.

²⁸³ Cf., however, MS 50, Couv. 111, where the *k* of Hit. *har(k)*- is considered part of the root, and the root is equated with IE *ark*- in Lat. *arceō*, etc.

²⁸⁴ WP ii, 369, EM 852.

²⁸⁵ WP i, 280, Bois. 297.

²⁸⁶ Cf. Bois. 1054.

²⁸⁷ WP ii, 172, Feist 75-6.

50. *yeRe* 'sharp implement; cut, pierce'. R unattested. *R *yeyele* > IE *ēl*-²⁸⁸ 'ridge, line furrow (lit. a cut)' in Skt. *ālī*- id., ON *dǫll* 'ridge, cut, bed of river'; also in Skt. *ārā* 'awl', OHG *āla*, OE *æl* id. pR *be-yere* > IE *bher*-²⁸⁹ 'sharp tool, cut bore' in Gk. *φάω* 'split', Lat. *forō* 'pierce'; *ge-yere* > IE *gher*-²⁹⁰ 'scrape, scratch' in Gk. *χαράσσω* 'make pointed, sharpen, whet; scrape, scratch', Lith. *žeriu* 'scrape, scratch'; also, with delayed total reduction, *ge-yere* > *q²hel*-²⁹¹ in Lith. *galāndu* 'whet, sharpen'. pRs *be-yere-ye* > IE *bhrey*-²⁹² 'sharp tool, sharp, edge' in OIr. *brú* 'edge, margin, shore', OIc. *brýna* 'whet, sharpen', and *brún* 'edge', Lith. *briaund* 'edge, back of a knife, keel (of ship)'; *be-yere-že* > IE *bhrež*-²⁹³ 'work with a sharp tool, cut' in Skt. *bhrīṇānti* 'they destroy', Avest. *pa'ri-brīnanha* 'thou hast cut', Thrac. *βριδων* 'barber', OCS *brīva* 'razor'. pR + R *be-yere-deye* > IE *bherdh*-²⁹⁴ 'cut' in Skt. *bardhaka*- 'cutting', Gk. *πέρω* 'destroy'.

51. *yele* 'a (light) colour, be coloured; a spot, be spotted', etc. R IE *el*-²⁹⁵ 'yellowish' in Skt. *aruṇā*- 'reddish, golden-yellow', OHG *elo* 'yellow', and probably Lith. *dvas* 'tin'. R's *ye-ye-le-ke* > IE *ylek*-²⁹⁶ 'shine' in Skt. *ulkā* 'fiery apparition, meteor', Gk. *ἡλεκτωρ* 'brilliant', *ἄβλαξ* (= *ἄφλαξ*) *λαμπρῶς* (Hesych.), Lat. *Volcānus* 'god of fire'. pR *be-yele* > IE *bhel*-²⁹⁷ 'shine' in Gk. *φάλος* *λευκός* (Hesych.), Lith. *báltas* 'white', OCS *bělo* id.; the IE root also in words meaning 'whitish plant', cf. Gaul. *βελουοντιαμ* 'henbane', ORuss. *belenā*, OHG *bilisa*, NHG *Bilsenkraut* id.; *de-yele* > IE *dhel*-²⁹⁸ 'light yellow' in Arm. *delin* 'yellow, pale, sandy', Mir. *delrad* 'shine', AS *deall* 'lighting, making a show, proud'; *ge-yele* > IE *ghel*-²⁹⁹ 'shine, gleam; yellow, green, gray, blue' in Skt. *hári*- 'yellow, yellowish, golden', Thrac. *ζηλτα* 'gold', and with delayed total reduction > *q²hel*-²⁹⁹ in Lith. *geltas* 'yellow'. p(°)R *be-(ye)yere* > IE *bhēr*-³⁰⁰ 'light, brown (of animals)' in Skt. *bhalla*- 'bear', OHG *bero* id., OHG, MHG *brun*, NE *brown*, also Gk. *φάρη* *νεφέλαι*, *φαρύνει* *λαμπρύνει* (Hesych.). pRs *be-yele-ge* > IE *bhelg*-³⁰¹ 'shine, white' in Lett. *balgans* 'whitish'.

52. *yeje*- 'rain, snow, cold'. R IH *yej*- in Hit. *heyus* 'rain'. Rs *yeje-se* > IE *eis*-³⁰² 'ice' in OHG *is*, AS id., NE *ice*. pR *ge-yeje* > IH *gyej*- 'winter, snow', etc., in Hit. *gimmanza* 'winter', IE *ghei*-³⁰³ 'winter' etc., in Skt. *hemantā*- 'winter', Gk. *χέιμα*, Lat. *hiems* id.

²⁸⁸ WP i, 155, Bois. 1081.

²⁸⁹ WP ii, 159 s.v. 3 *bher*- 'sharp tool, cut, bore, scrape', and ii, 162 s.v. 6 *bher*- 'protrude, edge, point, corner'; cf. also WH i, 481 s.v. *feriō* and i, 526 s.v. *forceps*.

²⁹⁰ WP i, 602, Bois. 1051.

²⁹¹ Cf. WP i, 629 s.v. *ghel*- 'cut', and Feist 215 s.v. *gilpa*.

²⁹² WP ii, 196.

²⁹³ Essentially an alternant of the preceding; WP ii, 194.

²⁹⁴ WP ii, 174, Bois. 771.

²⁹⁵ WP i, 159 s.v. *elu*-.

²⁹⁶ WP i, 321, Bois. 319.

²⁹⁷ WP ii, 175 s.v. 1 *bhel*- 'shine' and ii, 180 s.v. 5 *bhel*- 'whitish plant'; cf. also Bois. 1013.

²⁹⁸ WP i, 865 s.v. 2 *dhel*-.

²⁹⁹ WP i, 624, cf. also i, 631 *ghel-ōu*- 'tortoise (of yellow colour)'.

³⁰⁰ WP ii, 166.

³⁰¹ WP ii, 214.

³⁰² WP i, 108.

³⁰³ WP i, 546, WH i, 645, Bois. 1053.

53. *yeŷe* (A) 'be, live'. R IH *yeŷ-* in Hit. *huwai-* 'grow', also in Hit. *hwitar* 'animals', as probably also IE *ovis*³⁰⁴ 'sheep' in Skt. *avi-*, Gk. *ōis*, Lat. *ovis*, Goth. *awēpi* 'herd of sheep'. Rs *yeŷe-se* > IH *ŷŷes-* in Hit. *hwes-* 'be alive', IE *ŷes*³⁰⁵ 'be, tarry, dwell' in Skt. *vāsati* 'tarry, dwell', Goth. *wisan* 'be', and prob. Toch. A. *wās-k* 'be in motion'; *yeŷe-ke* > IE *euk*³⁰⁶ 'be or grow accustomed' in Arm. *usanim* 'grow accustomed, learn', Goth. *bi-uhts* 'accustomed'. pR *be-yeŷe* > IE *bheŷ*³⁰⁷ 'be' in Skt. *bhāvati* 'be', Lat. *fui* 'was', Gk. *φύροpes* γεννήροpes (Hesych.); *de-yeŷe* > IE *dheŷ*³⁰⁸ 'blow, breathe, smoke' in Gk. *θύω* 'blow, smoke', Lat. *suf-fiō* 'smoke', Lat. *fūmus* sb. id., OCS *dunqti* 'blow'. pRs *de-yeŷe-se* > IE *dheŷs*³⁰⁹ 'breathe; animal' in Lith. *dvēsiù* 'breathe, sigh', OCS *dysq* 'breathe, blow'; Lat. *ferus* 'wild animal, wild, savage', Goth. *dīus* 'wild animal, OE *dēor*, NE *deer*; *ge-yeŷe-re* > IE *ghŷer*³¹⁰ 'animal' in Gk. *θήρ* 'animal', Lith. *žvėris* 'wild animal', OCS *žvěr* id. pR's *be-ye-re-ŷe-ge* > IE *bh(e)rug*³¹¹ 'air-tube, throat' in Gk. *φάρυγξ*, 'air-tube, gullet', Lat. *frūmen* 'gullet, palate', OIc. *barki* 'throat'. pR + R *be-yeŷe-deŷe* > IE *bheudh*³¹² 'wake' in Skt. *bódhati* 'wake', Gk. *πείθομαι* 'learn', Lith. *bundù* 'wake'.

54. *yeŷe* (B) 'move, be in motion' (very probably connected or identical with the preceding root). R IH *yeŷ-* in Hit. *huwai-* 'flee, go'. R' *ye-me-ŷe* > IE *meŷ*³¹³ 'move' in Skt. *mīvati* 'move, shove', Lat. *moveō* 'move, set in motion', Toch. A. *me*, *mew* 'shake, tremble'; *ye-ne-ŷe* > IE *neŷ*³¹⁴ 'move, set in motion, make a slight motion', in Skt. *nāuli* 'move, turn', Gk. *νέω* 'nod, wink', Lat. *nuō* id.; *ye-se-ŷe* > IE *seŷ*³¹⁵ 'set in motion' in Skt. *savati* 'go', Avest. *haw-* in *hunā'ti* 'set in motion'. pR *de-yeŷe* > IE *dheŷ*³¹⁶ 'run' in Skt. *dharate* 'run', Gk. *θέω* id. pRs *be-yeŷe-ge* > IE *bheug*³¹⁷ 'flee' in Gk. *φεύγω*, Lat. *fugiō* id. R + R *yeŷe-beŷe* > IE *ŷebh*³¹⁸ 'move hither and thither, waver' in OHG *weban*, MHG *weben*, NE *weave*; *yeŷe-deŷe* > IE *ŷedh*³¹⁹ 'lead' in Lith. *vedù* 'lead', OIr. *fedid* id., Avest. *vādaye'ti* 'lead, draw'; *yeŷe-geŷe* > IE *ŷcgh*³²⁰ 'move' in Skt. *vāhati* 'lead, pull, draw', Lat. *vehō* 'bear, carry, lead, bring', Goth. *ga-wigan* 'move'. pR + R *ge-yeŷe-geŷe* > IE *ghcugh*³²¹ 'move rapidly and playfully' in OHG *goukolon* 'play tricks', MHG *gicge* 'fool'.

³⁰⁴ WP i, 167, EM 718, Feist 70. In Hit. *hwitar*, the *-tar* is a noun-forming suffix, cf. SHG § 156.

³⁰⁵ WP i, 306, SSS 468, Feist 567, and cf. JAOS 60.185 fn. 8 (1940).

³⁰⁶ WP i, 111, Feist 97.

³⁰⁷ WP ii, 140, WH i, 557.

³⁰⁸ WP i, 835.

³⁰⁹ WP i, 843, Feist 121.

³¹⁰ WP i, 642, Bois. 344.

³¹¹ WP ii, 171, WH i, 551, Bois. 1017.

³¹² WP ii, 147, Bois. 776.

³¹³ WP ii, 252 s.v. 2 *meu-*, SSS 456, and cf. Bois. 57 s.v. *ἀμύρω*.

³¹⁴ WP ii, 323, Bois. 665.

³¹⁵ Cf. WP ii, 470 s.v. 2 *seu-*.

³¹⁶ WP i, 834, Bois. 342.

³¹⁷ WP ii, 144, WH i, 556, Bois. 1022.

³¹⁸ WP i, 257.

³¹⁹ WP i, 255.

³²⁰ WP i, 249, Feist 212; Hit. *weh-*, *wah-* 'turn, fall, versari' does not belong here either phonologically or semantically.

³²¹ WP i, 249.

ROOTS WITH MEDIAL LARYNGEAL

55. *de'e*³²² 'go; direction' or the like. R *dē'e* > IE *dē-* in Lat. *dē-nique* :: *dō-nec*; accentual variant *de'ē* > IH *d'e-* > IE *te-*, the sentence-connective postulated by Ungnad, cf., e.g., Lat. *te-nus*, as part of the IE neo-simplex pronominal stem *to-*. This is probably also the sequence present in Goth. *du* 'to', with application of Verner's Law to initial position.³²³

56. *ge'e* 'lie, lie down'. R unattested. Rs *gē'e-le* > IH *ge'l-* > IE abl. var. *gōl-*³²⁴ (also, with analogical or secondary shortening, *gol-*) 'lie'; *ge'ē-ze* > IH *g'ej-* > *keḫ-* in Hit. *ki-* 'lie', IE *kei-*³²⁵ id. pR *ʔe-ge'e* in Hit. *ak(k)-* 'die' with an accentual variation still tolerated within historical Hittite, viz. sg. 3 *ʔegē'e* (presumably endingless) > IH *ʔgē'-* > pre-Hit. *age* > Hit. *ake* (or *aki*) :: pl. 3 *ʔge'ente* > IH *ʔg'ént* + *i* > pre-Hit. abl. var. *akonti* > Hit. *akkanzi*. In this word, at least, Hittite, even in the historical period, bears witness to the consonantal effects (described in §§ 7-8 above) of the presence of a (voiceless) laryngeal in a shifting accentual pattern³²⁶ familiar to us, e.g., in IE sg. 3 *és-ti* (< PIE *'ése-te*) :: pl. 3 *sé-nti* (< PIE *'esé-nte*).

57. *dēye* 'put' (later 'give'). R *dēye* in Hit. *dā-* 'take', IE abl. var. *dō-* 'give'. Rs *dēyē-je* > IH *dyej-* (e.g., in sg. 1 *dēyē-je-xe* > IH *dyejxa* > pre-Hit. *dējxa* > Hit. *tehhi* [for expected *-hha* on the analogy of *-mi*], other parts of the Hittite paradigm show different accentuation; also in IE *dhēi-* 'place' e.g., Skt. *dhīyāte*; R(s) *dēyē-(ye)* (with final root-reduplication?) > IH *dye(y)-* > IE *dhē-*³²⁷ 'place'.

³²² Cf. 16 above.

³²³ Instances of Verner's Law in initial position were claimed by S. Bugge, PBB 12.399 (1887); 13.311-2 (1888), and discussed by A. Noreen, Abriss der urgermanischen Lautlehre, 125 sqq. (Strassburg, 1894), and by E. Prokosch, Comparative Germanic grammar, 68 (Philadelphia, 1939). Bugge, however, could not have used this example, as the requisite IE initial *t-* could not have been equated with the initial *d-* underlying Gmc. **tō*, e.g., OE *tō*. In this study, however, the alternation of *t* and *d* finds a ready explanation. Somewhat different is the explanation of J. Schmidt (KZ 26.355-6 [1882]) and B. Delbrück (IF 26.356-7 [1907]) of *du* as a proclitic form of Gmc. **tō* (cf. Feist 127), which would involve a consonantal change parallel to, but distinct from, Verner's Law.

³²⁴ WP i, 639.

³²⁵ WP i, 358.

³²⁶ Possibly certain other instances of vacillation between single and double writing in Hittite may reflect a similar state of affairs, or at least analogical imitations thereof.

³²⁷ Cf. WP i, 826, WH i, 360. For PIE the essential structural difference between the members of this group of verbs lay in the presence or absence of a formative suffix; this continues to be the case, though with some phonological obscurations, in Hittite; here the sg. 3 of the verbs falls together, and the two can be distinguished semantically only when in context. In IE, where the different 'orders' of the stops early came to be stereotyped as unitary phonemes, the essential difference lay between initial *d-* and *dh-*; minority forms with the 'wrong' initial (e.g., the pl. 3 of *dēye*, where *dēyē-nte* > IE **dhenti*, but was analogically reformed as the apophonic var. *donti*), were analogically reformed with the 'right' initial; by way of further distinction, the *o*-grade came to be used universally in the continuant of *dēye*, only rarely in that of *dēye-ye*. Over a large part (not all! cf. Lith. *dūomi*) of the IE area, reduplicated presents of both verbs came to replace the older unreduplicated ones; the new reduplicated present had a somewhat different accentuation, and in some IE dialects secondary reductions were thus brought about, e.g., reduplicated pl. 3 *dē-donti* > *dē-dnti* > Skt. *dādāti*; cf. also Skt. pl. 1 *da-dmās*, probably for an earlier **dā-dmas*. So, too, in substantive derivatives from this root, instances of *dēye* continuants in IE with a

This root, as *-deye*, occurs very frequently as the second radical in many compounds, thus giving rise to the IE so-called presential suffix *-dho-*.

58. Almost certainly roots *beye* and *geye*, of perhaps somewhat similar meaning, are the second radical in compounds underlying many IE neo-simplices in *-bh-* and *-gh-*, e.g., *ge-yré-beye* > IH *gyreby-* > IE *ghrebh-* (with velar *g*; in initial position, apparently, the expected palatalising influence of *y* could not operate before immediately following consonantal *r*;³²⁸ in the IE by-forms *gherebh-*, etc., derived from other accentuation, the velar must be analogical) 'seize'. Coalescence of biradical compounds in *-beye* and *-geye* took place earlier than in the case of those with *-deye*, since in the two former the resultant IE 'root final' *-bh-*, *-gh-* runs through all the concurrent stem-variants (e.g., Skt. aor. sg. I *agrabham*, pf. *jagrābha*, etc.), whereas the 'formantic' character of the *-dh* is sometimes still clear, cf. Lith. pres. sg. I *vérdū* :: prt. *viriaũ*, inf. *virti* 'cook'.

short vowel can have achieved the short vowel only by contamination or analogy. Louis H. Gray, AJP 62.476-84 (1941), on the other hand, operates with a short monosyllabic base *do-*.

³²⁸ WP I, 645-58, contains no entry of IE **gr-* or **ghr-*, but only *gr-*, *ghr-*; so, too, Brugmann, Gdr. I, §§ 596-629. On the other hand, **kr-* occurs frequently.

CONCLUSIONS

PREFIXES: POSSIBLE MEANINGS AND PREHISTORY

In the foregoing etymologies we have operated with the prehistoric prefixes *be-*, *de-*, *ge-* (and their accented phases *pé-*, *té-*, *ké-*), *me-*, *ne-*, *se-*, *ye-*, *'e-*, *te-*, and the quasi-prefixes *sye-* and *tue-*. There may well have been others. As regards their distribution, it will be noted that voiced-stop prefixes appear to occur only before root-initial laryngeals. Presumably, if they were ever used before root-initial stops, the resulting initial geminates and other consonantal clusters were simplified at a very early period.

Probably most prefixes were of perfective aspect, especially *be-* :: *pe-*, *de-* :: *te-*, *ge-* :: *ke-*, which also seem to have been mildly intensive (cf., e.g., R *'ete* 'go, fall' :: pR *be-'ete* 'fall, fly'; R *tele* 'grow' :: pR *de-téle* and its accentual variant *té-tele* 'bloom'); *de-* :: *te-*, in particular, is at the same time directional (cf. R *'ene* 'pull, work' :: pR *de-éne* 'pull toward, stretch'); *me-* seems to mean 'many' or the like (cf. R *xele* 'fruit' :: pR *mé-xele* 'fruit-laden branch' in Hit. *mahlas* 'vine', IE *māl-* 'apple-tree, apple'); *ne-* 'in' must be distinguished from *né-* 'not' (cf. esp. R *'eye* 'perceive' :: pR *né-:eye* '[lit. not-perceive] dead'; *se-* means 'down, away' (cf. R *'ese* 'be' :: pR *se-ése* '[lit. be down,] sleep'). For most of the other prefixes, the examples are as yet too few to attempt to determine their meanings.

Of the so-called quasi-prefixes, *sye-* is clearly reflexive, while *tue-* is also probably pronominal. These quasi-prefixes, implying as they do PIE dissyllabic or even polysyllabic pre-forms, may furnish a clue to the origin of some of the prefixes proper. Thus, ultimately, *de-* might turn out to be a 'clipped form' of the root *de'e* 'go; direction', and its accented phase *té-* could, perhaps be phonologically equated with the same root, if, at the time of the transition from PIE to IH, the first root of one-time biradical compounds of the type *de'e* + . . . was semantically sinking to prefixal status, though still accentually dominating the whole structure. The rare and late instances of accented *dé-* (and, conversely, of unaccented *te-*) would then be due to transitional PIE-IH secondary semantic distributions of the accentual phases, obscure analogies (e.g., association with the root *deye* 'put; give'), or the like. Thus it would appear that many, if not all, of the prefixes were, in origin, broken-down forms of roots, which, in some instances, continued as independent roots into IH or even later times.

SUFFIXES

In the foregoing etymologies we have operated with *pe-*, *te-*, *ke-* (and their voiced counterparts), *le-*, *re-*, *ne-*, *je-*, *ye-*, *se-*, *'e-*, *xe-*, *ye-*; but there must be others. So far as can be distinguished, their distribution is quite independent of accent. For most of these no meanings can, as yet, be suggested; *'e-* is, perhaps, definitive and concrete (cf. R *rege* 'sharp' :: Rs *rege-e* [perhaps in origin a nominal sentence 'sharp, that one'] 'sharp, point, edge'); *ye-* seems to be causative or emphatic.

As in the case of the prefixes, it is probable on a priori grounds that many of

the suffixes also are broken-down roots; thus 'e- might be a clipped form of 'e'e 'one, the one'; ye- even more probably is a clipped form of *deye* 'put', and perhaps also of the postulated *beye*, *geye*. If so, all our structural types might be reduced ultimately to $R + R + R + \dots$. Practically, however, in the case of every structure, one root or (in the case of biradical compounds) two roots dominate semantically, while the non-dominating root sinks to prefixal or suffixal status.

Some confirmation of the validity of the structural hypothesis here set forth might be drawn from the fact that Hittite, an admittedly archaic language, frequently exhibits R , R^i , or Rs types where IE has only pR , etc. It is suggested that the simplices postulated in this study (rather than structures of the type $pR \dots$) might be made the basis of tentative etymological comparison with the lexical material of such other linguistic areas as may, with any show of reason, be suspected of ultimate affinity with primitive Indo-European.

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